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REPORT
# of the
SAN FRANCISCO WATER DEPARTMENT

FISCAL YEAR

1965-1966

ARTHUR H. FRYE, JR.
General Manager and Chief Engineer

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REPORT FOR FISCAL YEAR
JULY 1, 1965 TO JUNE 30, 1966

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SAN FRANCISCO WATER DEPARTMENT

ARTHUR H. FRYE, JR.
General Manager and Chief Engineer

San Francisco's early growth required the City to become the earliest importer of water into the Bay Area and it is now the only importer within much of the area presently served by the Water Department. The later growth of former suburban area into cities surrounded by new suburban areas has caused water consumption to reach a new high of 214 million gallons per day average for 1965-66. Consumption outside the City averages 108 MGD, with 106 MGD being used in the City.

The activities of the Water Department were given new emphasis and direction with the appointment of Arthur H. Frye, Jr. as General Manager and Chief Engineer in June 1965. During fiscal year 1965-66 the following new steps were taken to provide for present and future needs of the approximately two million people now being served in the City and the more rapidly growing Peninsula and South Bay areas presently being served by the Water Department.

1) Funds were requested and approved for a study of future water needs of the present service area and of adjacent areas that may depend upon this Department's water supply as they develop; the present water supply and potential sources of water to meet these needs; the present plant facilities and future plant requirements necessary to supply the water needed; and to study present and potential uses of Department lands compatible with their primary purpose to produce, transport, store and distribute the needed quantities of high quality water.

2) An agreement is being prepared to employ consultants to make studies of the feasibility factors, utilities service, leasing methods and procedures pertaining to Pleasanton Industrial Park and to develop a master plan to serve as a guide in the future development of this property that heretofore has been used for agricultural purposes.

3) Additional personnel was requested to provide for needed reorganization of administrative functions and carry out the Department's growing responsibility as a public utility serving customers in four of the Bay Area counties. Personnel requested for administrative reorganization, operation of new facilities and to adjust for shorter work day were approved.

4) Consultants were employed to make a study and submit a report on a water control instrumentation system to provide a master plan for centralizing control of water transmission, storage and distribution. This system will improve efficiency and provide better service to our customers. Funds were requested and approved in the 1966-67 budget for the design and construction of the first phase of this system

5) In order to reduce the accumulated backlog of old, rusted or undersized service pipes that need replacing, the Department developed a program of contracting for

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the necessary street opening, excavation, backfilling and repaving, thus permitting the limited departmental personnel available for this program to devote their full time to doing the pipe work involved.

In carrying out existing programs to meet present and future water needs, Bay Division Pipeline No. 4 (Section A) and Alameda Siphon No. 3 started construction on March 16, 1966. The 8½-mile Section A of Bay Division Pipeline No. 4 is prestressed concrete pipe 8' in diameter and is the largest pipeline in the Water Department system. The construction of two four-million-gallon steel tanks in McLaren Park was completed an provides additional distribution storage and improved service pressure to areas previously served by Wilde Reservoir. Construction of McLaren Park Pump Station to provide increased delivery capacity into these tanks is under way. San Antonio Pump Station and Sunol Pump Station are under construction in Alameda County, as are their respective pipelines. These pump stations and pipelines will connect San Antonio Reservoir and Sunol Filter Galleries to transmission pipelines and Sunol Valley Filtration Plant so that water may be stored in San Antonio for future use and stored water may be delivered through the filter plant for delivery to consumers.

In order to deliver water of uniformly high quality to its customers, Sunol Valley Filtration Plant was constructed and put into operation on June 8, 1966, to treat water from Calaveras Reservoir for delivery to consumers. Plans and specifications prepared by consultants for the construction of a water treatment plant to treat water delivered from San Andreas Reservoir were being reviewed by the Depart- at the close of the fiscal year. Plans and specifications are completed for construction of Crystal Springs Bypass Tunnel and the necessary subsurface easements are being secured. When completed this bypass will enable Hetch Hetchy water and water from Sunol Valley Filtration Plant to be delivered to northern San Mateo County and to San Francisco without first entering Crystal Springs Reservoir.

The Department started electronic data processing of water bills December 1964, using rented computer time from a service bureau. Additional study indicated a saving would result from direct lease of equipment. From December 1, 1965, all operations formerly performed by a service bureau have been accomplished at Mason Street. Additional reports, accounting, stores inventory and time rolls formerly processed on the City Hall computer are now produced at Mason Street. Additional functions are being studied for computer applications.

The construction of Junipero Serra Freeway on watershed property of the Department continues to require the expenditure of time and effort by Department personnel. The proposed routing of the section south of Ralston has been opposed by the City as detrimental to water quality in its reservoirs. Local officials were conducted on a tour of the route on July 29, 1965. Mr. Frye attended the State Highway Commission meeting in San Diego on October 20, 1965. In response to San Francisco's request for intervention to Washington, D. C., the United States Public Health Service sent representatives to investigate the potential water pollution involved. Their report submitted on April 14, 1966, favored the City's request for re-routing. At the end of the fiscal year this matter is being re-studied by the State Highway Commission.

At the start of this fiscal year the Water Department, in cooperation with the United States Labor Department's Neighborhood Youth Corps, was employing 100 high school youths from impacted areas during their summer vacation. This program proved so successful that a new program employing 410 out of school youths was started on December 13, 1965. The full enrollment was not achieved and available funds were used to employ 100 out of school and 100 in school youths through the summer period.

The Water Department initiated a program to subject all personnel that operate motor vehicles to a tele-binocular vision test and hearing tests in an effort to improve the vehicle safety record. A review of all equipment was made for compliance with the new State Safety Order #1592 pertaining to back-up warning devices. These efforts, in addition to more emphasis on safety throughout the Department, is improving the Department's record.

Rainfall on the Peninsula Watershed areas in San Mateo County ranged from a low of 18.59 inches at Crystal Springs Cottage gaging station to a high of 31.90 inches at Pilarcitos. Data from the Department's five gaging stations on the Peninsula Watershed indicate rainfall for 1965-66 ranging from 69% to 75% of normal. At Calaveras Reservoir in Southern Alameda County the rainfall totaled 15.09 inches for the year, which is 69% of normal.

During the fiscal year the consumption of water in San Francisco averaged 100.3 million gallons per day, an increase of 1.4 million gallons per day, or 1.4%. The suburban consumption averaged 113.7 million gallons daily, which is an increase of 8.5 million gallons daily, or 8.1%. The overall system consumption averaged 214.0 million gallons per day, which is an increase of 9.8 million gallons per day, or 4.8% over last year.

Similar reports to the above of water use for fiscal years prior to 1960-61 showed water used in the San Francisco "consumption area" (which area included about 47 square miles of northern San Mateo County) rather than the use only within the City and County of San Francisco. Therefore, such figures from fiscal years' reports prior to 1960-61 are not directly comparable with those above shown herein.

This fiscal year's peak in daily water consumption for the entire system occurred on June 13th with 369.5 million gallons being used, as compared to the previous all-time peak of 310.6 million gallons which occurred August 19, 1964. The 369.5 million gallons is 72.7% more than the yearly average of 214.0 million gallons per day.

The day of minimum demand during this fiscal year occurred on December 26, 1965, when 131.8 million gallons were used, of 61.6% of the yearly average.

The highest average daily demand for any month during this fiscal year occurred during June 1966, with an average of 276.9 million gallons daily being consumed during the period. This compares to 262.0 million gallons per day average for August 1964, an increase of 14.9 million gallons or 5.7%.

Net water sales for 1965-66 amounted to $19,384,380, which includes the free water furnished to other San Francisco municipal departments amounting to $1,225,424. This $19,384,380 represents an increase of $815,858 or 4.4% over the previous year. Credit allowances totaling $59,128 which were applied to customers' bills are not included in the above total of $19,384,380. Accounts within the City increased $93,705, making total net sales within the City of $11,016,001, which is 56.8% of the value of Department's total net water sales. Suburban net sales increased $722,153 to a total of $8,368,379 or 43.2% of the value of the total water sales. The above figures represent the amount of billing for water during 1965-66, including the municipal non-paying accounts, and do not represent the amounts collected during the fiscal year.

The miscellaneous income of the Department from sale of lands, rentals, interest earned, agricultural operations, etc., totaled $1,105,317, making the total gross income (book value) for the year of $21,920,733, of which $1,225,424 represents non-paying San Francisco municipal accounts.

The number of active accounts on June 30, 1966, totaled 157,476. The total number of meters in service was 163,076 of which 2,958 were temporarily shut off.

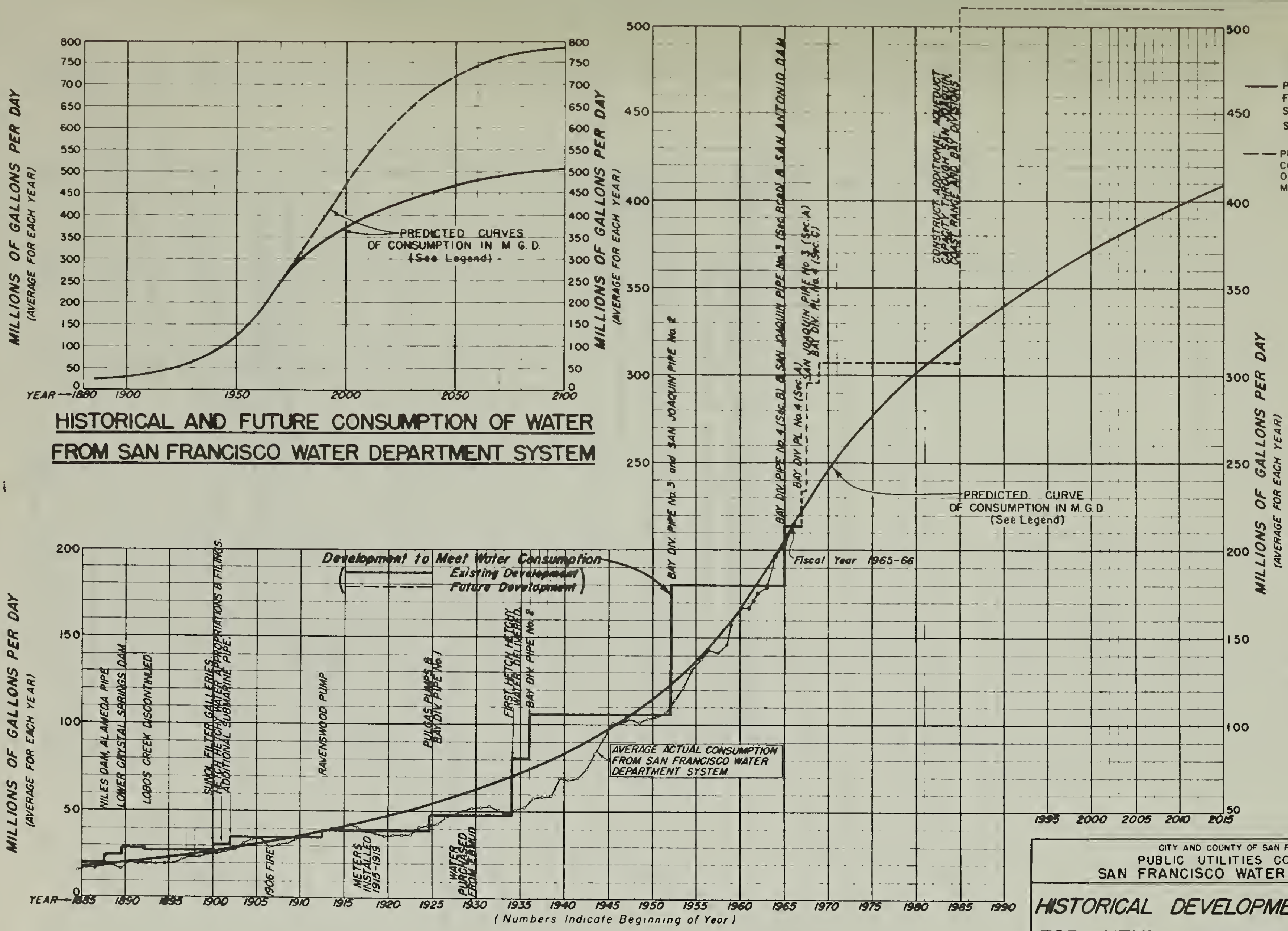
During the year 0.928 acre of land was sold and 0.000 acre purchased, making a net decrease of 0.928 acre which left a total of 62,960.592 acres under jurisdiction of the Department on June 30, 1966. Where real estate is no longer needed in the operation of the Department and for which no future use can be foreseen, it is sold.

Contracts were maintained with the Alameda County Assessor's office again during 1965-66. The land assessments indicate a decrease of $42,500 for a total land assessment of $1,267,450; improvements assessment remained the same at a total of $2,092,950; water rights indicate an increase of $42,800. The total change in these assessments is an increase of $300 above the previous year.

The total money spent on contracts, including the engineering and inspection costs on the cast iron main contracts, during the year was about $7,672,908.

This foreword would not be complete without expressing a sincere appreciation to our personnel for their loyalty, devotion to duty and cooperative efforts in maintaining and improving the efficiency of the Department.

Following is a more detailed account of the Water Department operations with some figures, subject to minor changes, as final accounting figures are not as yet completed.



HISTORICAL AND FUTURE CONSUMPTION OF WATER FROM SAN FRANCISCO WATER DEPARTMENT SYSTEM

LEGEND

- —— PREDICTED CONSUMPTION FROM SAN FRANCISCO'S SYSTEM WITHIN S F W D. SERVICE AREA.
- – – PREDICTED SUPPLEMENTAL CONSUMPTION IN AREA SHOWN ON EXHIBITS PRESENTED IN MARCH 1955 & APRIL 1936

NOTE.- Aqueduct development to meet water consumption includes only work for delivery to the peninsula reservoirs and consumers from main aqueduct, and does not include facilities for distribution therefrom.

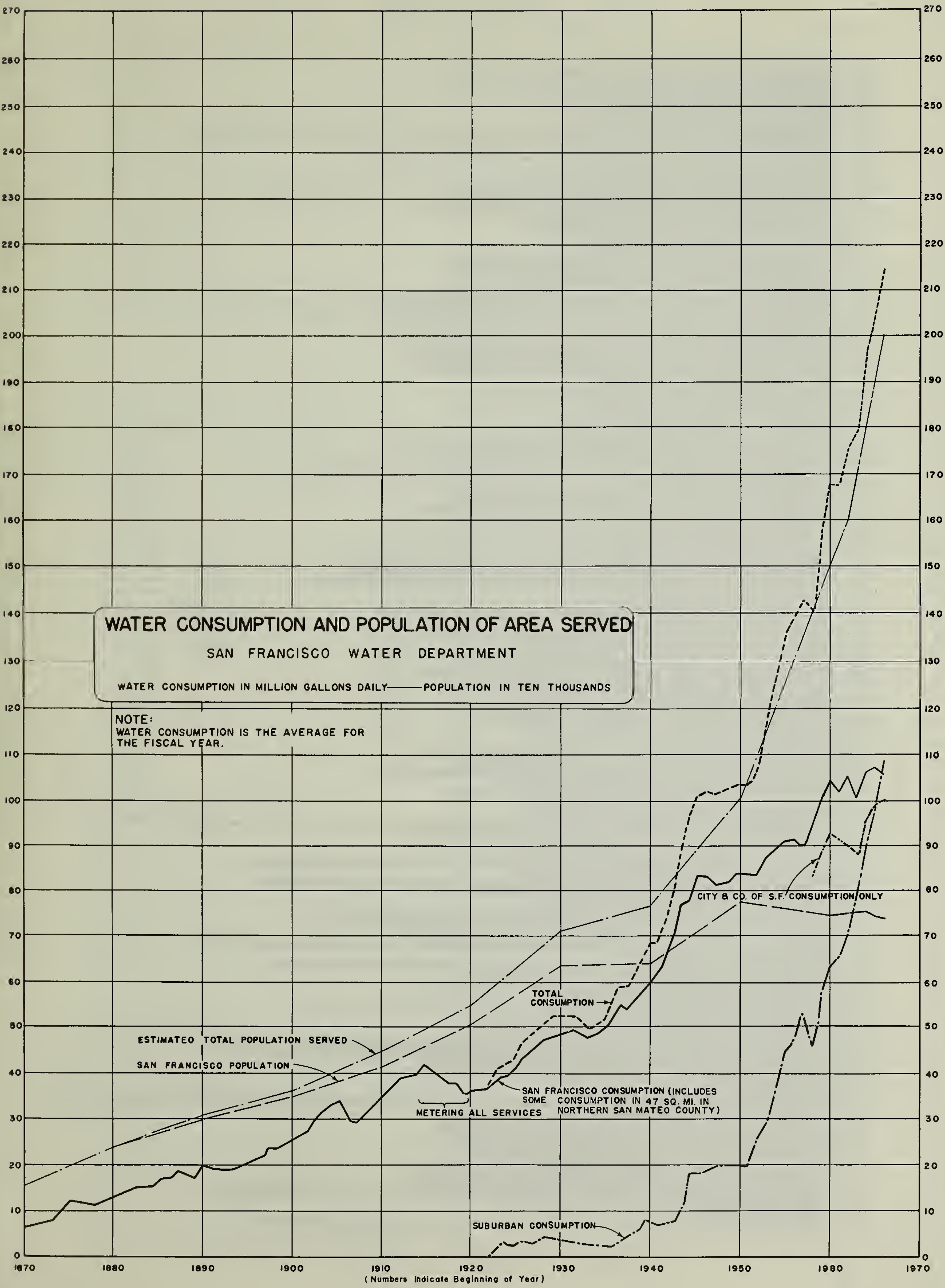
Local production of record has varied from none to 94 M.G.D. (Average for one Year) The average long range yield is about 50 M. G. D., and the safe yield, through historical 5-year critical periods, is about 36 M.G.D., including draft from carryover storage.

DEC 23, 1966
JAN 15, 1966
JULY 28, 1965
DEC 18, 1963
SEPT. 25, 1963
AUG. 30, 1962
AUG. 23, 1961
FEB. 1, 1961
SEP 7, 1960
DEC 21, 1959
MAY 14, 1959
OCT 17, 1957
REVISED

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

HISTORICAL DEVELOPMENT & PROGRAM FOR FUTURE AQUEDUCT CONSTRUCTION

APPROVED Geo. Burr	SCALE AS SHOWN	BY J S C	DR. D J S	DRAWING NO.
APPROVED J. H. Turner GENERAL MANAGER AND CHIEF ENGINEER		TR D J S	CH	X-1682D
		DATE NOV 8, 1955	REVISED See Above	

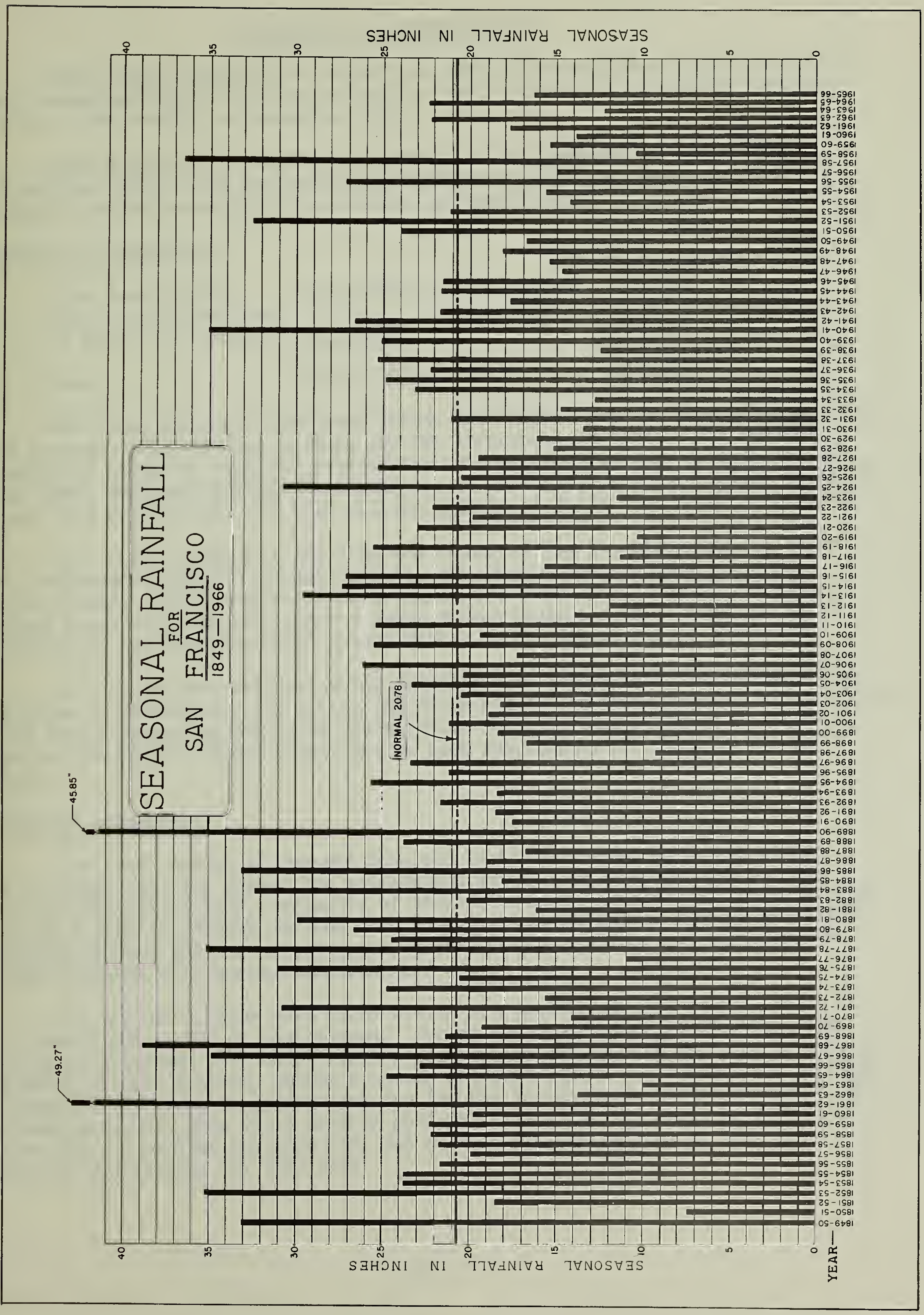


WATER CONSUMPTION AND POPULATION OF AREA SERVED

SAN FRANCISCO WATER DEPARTMENT

WATER CONSUMPTION IN MILLION GALLONS DAILY——POPULATION IN TEN THOUSANDS

NOTE:
WATER CONSUMPTION IS THE AVERAGE FOR THE FISCAL YEAR.


SEASONAL RAINFALL FOR SAN FRANCISCO 1849—1966
SEASONAL RAINFALL IN INCHES
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30
35
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YEAR—
NORMAL 20.78
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1965-66

PRODUCTION AND TRANSMISSION

Total water provided for consumption during the year was 78,097.677 million gallons, averaging 213.966 million gallons per day, which is 9.736 million gallons per day more than during the preceding year.

Deliveries within the City and County of San Francisco averaged 100.3 million gallons daily, with deliveries to surburan areas in San Mateo, Santa Clara and Alameda Counties averaging 113.7 million gallons daily.

Deliveries for Consumption:

From Hetch Hetchy	59,003.152	million	gallons	(75.6%)
From local production & carry over storage	19,094.525	"	"	(24.4%)
Total	78,097.677			(100.0%)

The total delivery from Hetch Hetchy this fiscal year of 59,003.152 million gallons averaged 161.7 million gallons per day throughout the year. The average daily delivery of water, from all sources for consumption from July 1, 1934 through June 30, 1966, has been 117.0 million gallons, of which 74.2 million gallons or 63.4% have come from Hetch Hetchy and 42.8 million gallons or 36.6% from local production.

All water supplied to the City and County of San Francisco was, as heretofore, delivered entirely from San Andreas, and Crystal Springs Reservoirs in San Mateo County. Those reservoirs were replenished from local run-off, by water drawn from Calaveras Reservoir and the Sunol Filter Galleries in Alameda and Santa Clara Counties, and from the Hetch Hetchy System in the Sierra Nevada Mountains.

This Department delivers water directly from the several transmission and supply lines to practically all cities and districts in San Mateo County; to Palo Alto Mountain View, Sunnyvale, Los Altos and Milpitas in Santa Clara County; to Hayward, Fremont and Newark in Alameda County and to some unincorporated areas in the three counties.

Rainfall and Catchment:

The total amount of run-off from the local watersheds which was stored and/or diverted into the system for consumption was 20.6 million gallons per day average for the fiscal year, exclusive of production from the Sunol Filter Galleries. This is 29.4 million gallons per day less than the current normal average production of about 50 million gallons per day; and is 58.5 million gallons per day less than the 1964-65 fiscal year average production.

At Calaveras there were 15.09 inches of rainfall for the season, which is 69% of normal and is 59% of last season. During the fiscal year 13,883.6 million gallons were withdrawn from Calaveras for consumption and the net decrease in storage was 9,897.3 million gallons, making a usable productivity of 3,986.3 million gallons, an average of 10.9 million gallons per day for the fiscal year. Total run-off into this reservoir, including 376.3 million gallons released to the creek to satisfy water rights and similar requirements, was 4,362.6 million gallons or 12.0 million gallons per day average for this year.

James H. Turner Dam (San Antonio Project) was completed February 23, 1965. The water impounded behind this dam on July 1, 1966 is at elevation 393.8, representing about 3,467 million gallons of water. Usable production amounted to 537 million gallons or an average for the year of 1.47 million gallons per day.

Peninsula watershed rainfall averaged about 72.3% of normal as indicated by the readings at the five rain gaging stations on the watersheds. The rainfall at the San Andreas station was 27.04 inches which was 74.2% of normal; at Pilarcitos 31.90 inches, 71.3% of normal; at Lower Crystal Springs station 20.38 inches or 75.4% of normal; Upper Crystal Springs station 21.58 inches which was 69.3% of normal; and at the Crystal Springs Cottage station 18.59 inches or 71.1% or normal.

Total storage in the four Peninsula reservoirs was decreased 1,734.8 million gallons during the year. The Bay Division pipelines delivered 45,440.1 million gallons to Crystal Springs Reservoir and there were 49,516.5 million gallons withdrawn from Crystal Springs and San Andreas for consumption. Usable production from the four reservoirs amounted to 3,009.0 million gallons or an average of 8.2 million gallons per day.

The Sunol rainfall station recorded 13.58 inches for the year which was 67.7% of normal and 54.0% of last season. During this fiscal year about 1,138.4 million gallons, an average of 3.1 million gallons per day, were collected in the Sunol Filter Galleries as measured at the Brightside Weir

Rainfall at the Pleasanton Well Field gaging station was 13.95 inches for the year. This was 69.7% of normal and 68.4% of the previous year's rainfall.

Storage:

Calaveras storage on July 1, 1965 was 28,037 million gallons (gage 139' 7-3/4") or 88.9% of its capacity. Storage dropped to 19,729 million gallons (gage 118' 11-1/2") on December 16, 1965. Withdrawal for consumption was stopped on January 8, 1966 and was resumed on February 17, 1966, and withdrawals continued during the balance of the fiscal year. The seasonal rains raised the reservoir water level to a gage height of 128' 1-1/4" on February 17, 1966, or 23,219 million gallons. By July 1, 1966 the reservoir water level was at gage height of 114' 6-1/4" with 18,139 million gallons stored. This was 57.5% of its capacity and 9,898 million gallons less than at the beginning of the fiscal year.

San Antonio storage at the beginning of the year was 2,930 million gallons (gage 388' 1"). The seasonal rains raised the reservoir water level to a gage height of 394' 10-3/4" on March 19, 1966 or 3,574 million gallons. By July 1, 1966 the reservoir water level was at gage height of 393' 9-1/2" with 3,467 million gallons stored. This was 21.1% of its capacity and 537 million gallons more than at the beginning of the fiscal year.

Crystal Springs storage at the beginning of the year was 15,818 million gallons (gage 106' 4") which was drawn down to 14,736 million gallons (gage 103' 4-3/4") on October 28, 1965. It was filled to 18,488 million gallons (gage 112' 11-3/4") on March 23, 1966. On July 1, 1966 there were 14,841 million gallons (gage 103' 8-1/4") of water in storage which was 78.0% of the capacity without flashboards (or 65.7% with flashboards) and 977 million gallons less than at the beginning of the year.

San Andreas storage on July 1, 1965 was 5,109 million gallons (gage 78' 11-1/2") which was decreased to 4,903 million gallons (gage 77' 6-3/4") on September 23, 1965. This was increased to 5,730 million gallons (gage 83' 0-3/4") on January 14, 1966. At the end of the year the reservoir was 71.6% full, containing 4,435 million gallons, a decrease of 674 million gallons during the year.

Pilarcitos contained 880 million gallons (gage 40' 2-3/4") of water at the beginning of the year. Withdrawals reduced the storage to the year's low of 633 million gallons (gage 32' 3-1/4") on January 26, 1966. On July 1, 1966 there were 797 million gallons (gage 37' 8") in storage, which is 78.9% of capacity, with flashboards, and 84 million gallons less than at the beginning of the fiscal year.

Lake Merced water has not been withdrawan for domestic consumption since January 4, 1934 but it still remains an emergency source of water supply, and an average of about 0.4 million gallons per day is being withdrawn annually for irrigation on Harding Park Golf Course.

Transmission Lines:

Calaveras Pipeline carried a total of 13,744.4 million gallons (37.7 million gallons per day) from the reservoir to Alameda Creek Siphon. The line was shut down between January 8, 1966 and February 16, 1966. In addition to the above 13,744.4 million draft, 376.3 million gallons were drawn from Calaveras Reservoir to satisfy prior water rights requirements and for flushing the pipeline and filter gallery area.

The Sunol Pipeline delivered a total of 379.7 million gallons (1.04 million gallons per day) of water to the Sunol area from the Alameda Creek Siphon during the year. Of this total 284.5 million gallons (0.78 million gallons per day) were used for irrigation of the Water Department lands, 34.7 million gallons (0.10 million gallons per day) were used for the Sunol domestic supply, and 60.4 million gallons (0.17 million gallons per day) for miscellaneous consumption. Deliveries directly to consumers from the siphon totaled 279.3 million gallons (0.77 million gallons per day), out of which 273.0 million gallons (0.75 million gallons per day) were delivered to the General Electric Co. at Vallecitos. The balance went to other small consumers.

The Sunol Aqueduct transported 1,138.4 million gallons (3.1 million gallons per day) of Sunol Filter Gallery water to Niles Reservoir during the year. As of May 24, 1963, the 36" Alameda Pipeline was under lease agreement with the Alameda County Water District; There was no water transported through the 44" Niles-Irvington Pipeline to the Irvington Pump Station; and 93.6 million gallons (0.26 million gallons per day) were spilled into Clark Ditch and thence to Alameda County Water District; all of which uses of the water by Alameda County Water District were to satisfy water rights and related requirements. There was a decrease in storage of 271,000 gallons in Niles Reservoir during the year.

The Coast Range Tunnel carried 58,837.2 million gallons of Hetch Hetchy water to the Alameda Creek Siphon (161.2 million gallons per day average). A total of 13,744.4 million gallons (37.7 million gallons per day) was released from Calaveras Reservoir into the Alameda Siphon, making a total input of 72,581.6 million gallons (198.9 million gallons daily) into the siphon.

Deliveries therefrom to the Sunol and Livermore areas total 659.0 million gallons (1.8 million gallons per day) and the remaining 69,902.5 million gallons (an average of 191.5 million gallons per day) was carried through the Irvington Tunnel.

Consumers withdrew 2,020.2 million gallons between Irvington Portal and the Irvington Meters, where there was registered a total flow in the three Bay Division Pipelines of 69,902.5 million gallons. Withdrawals between the Irvington Meters and San Francisco Bay, and its continuation to Coyote River, amounted to 3,959.9 million gallons and there was no water pumped into Bay Division Pipeline No. 2 at Irvington Pumps; the remaining 65,942.5 million gallons were transported to the Peninsula Division. Additional withdrawals of 20,502.4 million gallons on the west side of the Bay and west of Coyote River, left a total of 45,440.0 million gallons (124.5 million gallons per day) which were delivered through Pulgas Tunnel to Upper Crystal Springs Reservoir. There was 74.4 million gallons per day average consumption of water from the aqueduct east of Crystal Springs Reservoir.

The two Crystal Springs pipelines carried an average of 107.2 million gallons per day from Lower Crystal Springs Reservoir. This was distributed as follows: To Sunset Pipeline and thence to Lake Merced Pump Station, 49.9 million gallons per day; to University Mound distribution system and to consumers between there and Millbrae Headquarters, 27.5 million gallons per day; and the remaining 29.7 million gallons daily to the distribution systems of the several Peninsula communities as far south as San Carlos.

San Andreas Pipeline No. 2 carried an average of 24.0 million gallons daily from the reservoir to the Sunset Reservoir and College Hill Reservoir distribution systems, and to the consumers along the pipeline.

The Baden-Merced Pipeline carried an average of 2.8 million gallons per day, a total of 1,005.4 million gallons, to the Merced-Manor district. The San Andreas South (No. 1) outlet was not used this fiscal year to withdraw water from the reservoir. The City of Millbrae service at Taylor Field was supplied 313.0 million gallons of water from San Andreas Reservoir through the Middle (No. 3) outlet, Sunset-San Andreas Branch, cross connection at Reservoir and San Andreas Pipeline No. 1 (44"). In addition to the 313.0 million gallons there was withdrawn through the Middle outlet 1,108.9 million gallons to the Sunset-San Andreas Branch Pipeline.

The Crystal Springs San Andreas Aqueduct carried a total of 8,978.7 million gallons (24.6 million gallons per day) of water from the Crystal Springs Pumps to San Andreas Reservoir. In addition, this aqueduct serves as part of the means of delivering San Mateo Creek Dam No. 2 water to San Andreas Reservoir, and also serves as the means of delivering water to San Andreas that is collected along the east side of San Andreas Creek.

The Pilarcitos Aqueduct to San Andreas Reservoir was in service 15 weeks during the year and carried an average of 3.6 million gallons per day throughout the year to San Andreas Reservoir.

Pump Stations:

The Irvington Pumps were not operated during the fiscal year 1965-66.

One or more of the Crystal Springs-San Andreas Pumps operated 45 weeks during the year. A total of 8,978.7 million gallons was pumped to San Andreas Reservoir, making a daily average of 24.6 million gallons. Crystal Springs booster pumps were not operating during the year.

The Baden Pumps were not operated during the 1965-66 fiscal year. The motors were kept dry and turned over every month and the station was maintained in a condition of readiness. The Alemany Pumps were not operated during the year but they were maintained in a condition of readiness.

The "O" line of Wells in the Pleasanton Well Field was operated intermittently throughout the year to supply 27.3 million gallons (0.07 million gallons per day) of water for the domestic needs of local consumers.

There was an estimated 53.6 million gallons (0.15 million gallons per day) of water pumped from Alameda Creek at the Sunol Headquarters and 447.3 million gallons (1.2 million gallons per day) drawn from the Pleasanton Well Field for irrigation use by lessees on Water Department lands at those locations in 1965-66.

Lake Merced Pumps boosted an average of 49.9 million gallons per day from the Sunset Pipeline, pumping 37.4 million gallons average daily to Sunset Reservoir and 12.5 million gallons average per day to Sutro Reservoir.

WATER RIGHTS

In accordance with the 1916 and subsequent 1936 and other Alameda County Water District Agreements, the Department released water for replenishment of the underground supply of the Niles Cone. The total release entering Niles Cone during the year is tentatively estimated to have been 93.6 million gallons.

The quantities of water due the District and the quantities released by the Water Department to the District for replenishing the underground waters for each of the past ten years prior to 1965-66 are as follows:

Year	Due the District		Released to District	
1952-53	757,955,000	Gallons	1,507,419,000	Gallons
1953-54	501,614,000	"	1,251,654,000	"
1954-55	747,020,000	"	722,995,000	"
1955-56	222,850,000	"	989,290,000	"
1956-57	403,850,000	"	1,538,450,000	"
1957-58	None		410,150,000	"
1958-59	284,585,000	Gallons	1,069,080,000	"
1959-60	239,766,000	"	694,682,000	"
1960-61	164,730,000	"	669,039,000	"
1961-62	160,873,000	"	692,974,000	"
10 Year Total	3,483,243,000	"	9,545,729,000	"

For Fiscal Years 1962-63 thru 1965-66 the United States Geological survey has not yet completed its computation of the quantity of water "Due to District" or "Released to District" since complications in the computation ensued from the fact that South Bay Aqueduct water is flowing down Niles Canyon and is therefore mixed with natural flows and the portion of San Francisco's water releases that also flow down Niles Canyon.

The net accumulated advance release to the Alameda County Water District in accordance with the terms of the 1936 agreement amount to the 32,367 million gallons reported as of June 30, 1962.

The Sheriff of Alameda County continued to use the U. S. Navy's "Camp Shoemaker" as "Santa Rita Rehabilitation Center" during the fiscal year. Water supplied to this institution, as well as to the former Naval Housing Project, Komandorski Village and Camp Parks, was taken by the U. S. Government from the 4.105 acre tract within the Pleasanton Township County Water District. The withdrawal of ground waters for such purposes varied from a high of 2.1 million gallons to a low of 0.3 million gallons per day on days when they pumped. The pumps operated throughout the year four or five days per week, averaging 951,156 gallons per day for the year.

The high water table for this year in the Pleasanton Well Field, as measured in Well No. W103X, was 128.7, occurring in May, 1966. This water level is 3.2 feet lower than the high water level of last year as measured at this well.

During the fiscal year, the tenants on the City's Well Field property near Pleasanton pumped about 447 million gallons of water from City-owned wells for irrigation of this leased property.

During this fiscal year the lessees on Department lands bordering Laguna and Alameda Creeks at Sunol used for irrigation about 54 million gallons of water pumped directly from these creeks.

In the City of San Francisco, the City Recreation and Park Department pumped 414 million gallons of water from Lake Merced, Harding Park and Golden Gate Park wells.

WATER QUALITY AND TREATMENT

GENERAL:

Customary procedures for the treatment of the San Francisco Water Supply were employed during the year and proper precautions were taken to insure its safety and purity. Disinfaction of all supplies was continuous and water served to consumers complied with the bacteriological standards for drinking water established by the United States Public Health Service.

Dissolved chemical content of the supply sources varies from a soft mountain water to that of a relatively hard ground water. The mountain water constitutes the principal source of supply and requires treatment for the control of its corrosive properties. It is combined in varying proportions with the harder water from other sources and is soft to moderately soft when served to consumers. The water is generally free from tastes and odors and the quality is good for an unfiltered supply derived primarily from surface sources.

LABORATORY:

All analytical work in the fields of biological bacteriology and chemistry, except the necessary field tests, was performed in our laboratory located at Millbrae which has been certified by the State Department of Public Health as an "Approved Water Laboratory for Complete Chemical and Complete Bacteriological Analyses".

Following is a tabulation which enumerates the field and laboratory tests made during the year in connection with water treatment, sanitary control and special investigations:

	1964-65	1965-66
Bacteriological Examinations	14,949	15,026
Microscopical Examinations of Algae	229	209
Electrical Conductivity Measurements	5,762	7,142
Turbidity Measurements	5,980	7,142
Partial Chemical Analyses	2,152	2,566
Fluoride Determinations	4,784	7,662
Color Measurements	1,380	1,500
Dissolved Oxygen Tests	887	941
Leak Origin Analyses	356	434
Complaint Investigations	137	106

	1964-65	1965-66
Chlorine Residual Determinations	12,540	12,894
Complete Mineral Analyses	5	2
Agar Plate Counts	5,980	5,760
Radioactivity Assays (Air & Water)	114	158
Miscellaneous Field Tests	4,308	5,704
Miscellaneous Laboratory Tests not otherwise included	12,549	14,087
	72,112	81,333

Due to the number of tests required in making an analysis, the execution of the above examinations actually required the performance of 33,027 chemical, 21,473 microbiological, and 29,409 physical tests, totaling 83,909 individual tests.

INSPECTIONS:

Periodic sanitary inspections of the watersheds were made to insure the protection of the water supply. In addition, a field inspection was made of the Tuolumne Meadows sewage disposal facilities.

During the year portions of the Bay Crossing No. 1 and 2 pipelines, Pulgas Tunnel, the San Andreas No. 3 Outlet Pipeline, the San Andreas No. 2 Pipeline, and the 90-inch Alameda Siphon were inspected to determine the nature and amount of organic and inorganic deposition, indications of corrosion and/or erosion.

CHLORINATION:

Disinfection of all supplies was continuous throughout the year with no water exposed to contamination from the point of final chlorination to the consumers' services. Eleven chlorination stations were operated, with Sunol Aqueduct, Crystal Springs No. 1, Crystal Springs No. 2, San Andreas No. 1, and Stanford Heights in continuous service. Of the remaining stations, Calaveras was operated for 10.9 months, Tesla Portal for 11.8 months, San Andreas No. 3 for 11.7 months, San Andreas No. 2 for 0.3 months, Rock River for 10.5 months, and the Sunol Valley Water Treatment Plant for 0.7 months. The hypochlorination stations at Moccasin, Early Intake, and Dion R. Holm Power House in the Hetch Hetchy Water System were in continuous operation, as were those at Potrero Heights, Wilde Avenue Reservoir, and at the Watershed Keepers' cottages in the Peninsula Division.

A total of 2,386,933 pounds of chlorine gas and 2,454 pounds of chlorine in the form of liquid sodium hypochlorite was used during the year. The combined total of 2,389,387 pounds is 0.9% over the amount used last year. Tesla Portal in the Coast Range Division accounted for 41.3% of this amount, the Alameda Division for 14.0%, the Peninsula Division for 44.7%,

and the City Distribution Division for 0.1%. Chlorine dosages averaged 17.9 pounds per million gallons at the Tesla Station, 23.0 pounds per million gallons at the Calaveras Station, 11.7 pounds per million gallons at the Sunol Station, 21.3 pounds per million gallons at the Crystal Springs Stations, and 24.4 pounds per million gallons at the San Andreas Stations.

DECHLORINATION:

Automatic sulfur dioxide treatment facilities for the partial dechlorination of the water in the Crystal Springs and San Andreas transmission pipelines were constructed and placed into service during the year.

Stations	Total Operation Time (months)	Sulfur Dioxide Used (lbs.)	Treatment of water (Mil.Gals)	Average Dosage (Lbs/ Mil.Gals)	(Mg/ Liter)
San Andreas No. 2	11.4	69,806	8,473.14	8.24	0.99
Sunset Supply Line - S.A. Branch	8.1	5,678	1,198.52	4.74	0.57
Crystal Springs No. 1	11.8	96,885	20,976.40	4.62	0.55
Crystal Springs No. 2	11.8	79.881	17,400.90	4.59	0.55

FLUORIDATION:

Fluoridation of practically all water supplied from the Peninsula reservoirs was continuous throughout the year except for brief shutdowns for maintenance, repair and adjustment.

Effective and reliable safety features are provided, and there was no overdosage of fluoride in any of the water served to consumers during the year.

During the past fiscal year, a total of 573,406 pounds of sodium silicofluoride was used to treat 47,703.6 million gallons of water. The average dosage of 12.0 pounds of the compound per million gallons is equal to 0.86 milligrams per liter of available fluoride. This amount, added to the 0.05 milligrams per liter of the natural fluoride content of the water, gave an average total fluoride concentration in the water served to consumers of 0.91 milligrams per liter.

CORROSION CONTROL:

A total of 2,229,983 pounds of lime was used at the Rock River plant in treating 55,078.8 million gallons of water, giving an average dosage of 40.5 pounds per million gallons. The amount used was 4.2% greater than last year's total.

ALGAE CONTROL:

A total of 123,140 pounds of copper sulfate was required during the year for the control of algae in our local storage and impounding reservoirs. This is 29.1% greater than the quantity used last year and 0.2% above the average for the past ten years. It was necessary to treat Calaveras, Upper Crystal Springs, and Stone Dam Reservoirs two times each, and San Andreas and Pilarcitos three times; lower Crystal Springs Reservoirs and Lake Merced-South were each treated once.

COAGULATION:

A total of 952,380 pounds (86,625 gallons) of liquid alum was used as needed during the rainy season to reduce the turbidity of the water entering Lower Crystal Springs Lake from San Andreas Creek. The amount used is 58.2% of last year's total.

WATER QUALITY:

Hetch Hetchy water was flowing into the system at various rates for the full year, except for two days of complete shutdown on November 24 and December 29, 1965, due to turbid water condition at Moccasin Reservoir. Calaveras water was flowing into the system from July 1, 1965, to January 7, 1966, and from February 17 through the end of the fiscal year. The Bay Division Pipelines carried varying mixtures of the above water with corresponding variations in the quality of water delivered to consumers served from these lines.

CROSS-CONNECTIONS:

There are 170 services to consumers who have cross-connections with other sources of supply on their premises and 281 services to fire and water service hydrants on the waterfront. To prevent backflow, which could contaminate the City's water supply, each of these 451 services has double check valve assemblies installed in them. Of the 562 check valve assemblies, three were found to be defective and were replaced or repaired.

TABLES AND CHARTS:

The following tables and charts are self-explanatory.

SAN FRANCISCO WATER DEPARTMENT
MINERAL ANALYSES
Table I

	A	B	C
Source	Hetch Hetchy Reservoir	Alameda East Portal (treated water)	Calaveras Pipe Line (treated water)
Date Sampled	May 5, 1965	May 5, 1965	May 5, 1965
MAJOR CHEMICAL CONSTITUENTS	mg/liter	mg/liter	mg/liter
Cations:			
Calcium (Ca++)	1.2	6.2	31.0
Magnesium (Mg++)	0.02	0.0	4.7
Sodium (Na+)	2.1	3.6	8.9
Potassium (K+)	0.6	0.7	1.8
Anions:			
Bicarbonate (HCO_3-)*	5.0	13.8	99.6
Carbonate (CO_3--)*		2.0	
Chloride (Cl-)	1.8	4.2	8.6
Sulfate (SO_4--)	1.2	2.9	22.0
Fluoride (F-)	0.1	0.1	0.2
MINOR, TRACE, AND NONIONIC CONSTITUENTS			
Copper (total as Cu)	0.01	0.005	0.02
Aluminum (total as Al_2O_3)	0.04	0.04	0.11
Iron (total as Fe_2O_3)	0.006	0.23	0.10
Manganese (total as MnO_2)	0.003	0.022	0.006
Silicon (total as SiO_2)	5.1	6.6	9.2
Lead (total as Pb)	<0.005	<0.005	<0.005
Chromium (total as Cr)	<0.002	<0.002	0.002
Arsenic (total as As)	<0.001	<0.001	0.002
Selenium	<0.01	<0.01	<0.01
Strontium (total as Sr)	<0.4	<0.4	<0.6
Barium (total as Ba)	<1.0	<1.0	<1.0
Cadmium (total as Cd)	<0.002	<0.002	<0.002
Zinc (total as Zn)	0.001	0.003	0.025
Silver (total asAg)	<0.01	<0.01	<0.01
Ammonia (free as NH_3)	<0.01	0.02	0.02
Nitrate (NO_3-)	0.2	0.3	0.9
Nitrite (NO_2-)	<0.001	<0.001	<0.001
Borate (BO_2-)	<0.04	<0.2	<0.04
Phosphate (PO_4---)	0.03	0.05	0.06
Cyanide (CN-)	<0.01	<0.01	<0.01
Phenol	<0.001	<0.001	<0.001
Oxygen (dissolved as O_2)	9.0	10.2	10.5
Detergent	<0.001	<0.001	<0.001
Chemical Oxygen Demand	<0.5	<0.5	<0.5
DERIVED VALUES			
Hardness as $CaCO_3$	3.0	15.0	95.5
Alkalinity as $CaCO_3$	4.1	14.7	81.5
Total Solids:			
Residue at 180°C	11.3	33.2	138.2
PHYSICAL MEASUREMENTS			
Conductivity (micromhos/cm)	19.4	55.0	231.0
pH	6.6	9.5	7.7
Turbidity (units)	1	1	7
Color (units)	5	5	13
Radioactivity (micromicrocuries/liter)			
Alpha	0.06 ± 3	0.5 ± 0.5	1.6 ± 1.1
Beta	8 ± 4	15 ± 5	17 ± 9

* Bicarbonate and carbonate are calculated from the pH and total alkalinity.

SAN FRANCISCO WATER DEPARTMENT
MINERAL ANALYSES
Table II

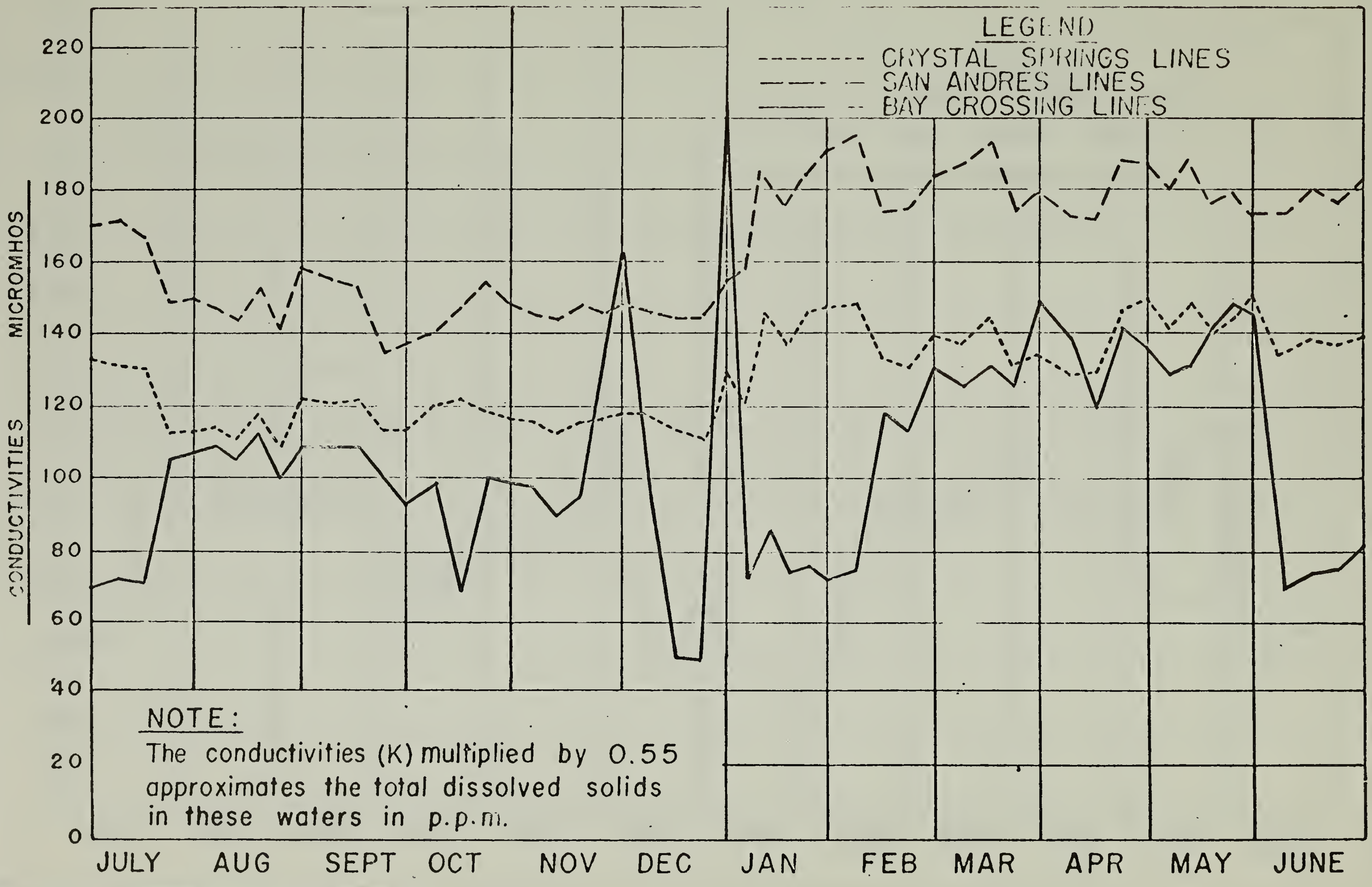
	A	B
Source	Crystal Springs Lines	San Andreas Lines
Date Sampled	May 5, 1965	May 5, 1965
MAJOR CHEMICAL CONSTITUENTS	mg/liter	mg/liter
Cations:		
Calcium (Ca++)	11.8	15.1
Magnesium (Mg++)	2.2	3.8
Sodium (Na+)	6.0	8.7
Potassium (K+)	1.0	1.1
Anions:		
Bicarbonate (HCO_3-)*	32.4	44.8
Chloride (Cl-)	8.2	13.8
Sulfate (SO_4--)	12.1	14.0
Fluoride (F-)	0.9	1.0
MINOR, TRACE, AND NONIONIC CONSTITUENTS		
Copper (total as Cu)	0.18	0.06
Aluminum (total as Al_2O_3)	<0.04	0.04
Iron (total as Fe_2O_3)	0.11	0.14
Manganese (total as MnO_2)	0.006	0.003
Silicon (total as SiO_2)	7.3	7.9
Lead (total as Pb)	<0.005	<0.005
Chromium (total as Cr)	<0.002	<0.002
Arsenic (total as As)	<0.001	<0.001
Selenium (total as Se)	<0.01	<0.01
Strontium (total as Sr)	0.5	0.6
Barium (total as Ba)	<1.0	<1.0
Cadmium (total as Cd)	<0.002	<0.002
Zinc (total as Zn)	0.011	0.011
Silver (total as Ag)	<0.02	<0.03
Ammonia (free as NH_3)	0.02	0.02
Nitrate (NO_3-)	0.3	0.2
Nitrite (NO_2-)	<0.001	<0.001
Borate (BO_2-)	0.1	<0.04
Phosphate (PO_4---)	0.07	0.06
Cyanide (CN-)	<0.01	<0.01
Phenol	<0.001	<0.001
Oxygen (dissolved as O_2)	10.2	10.3
Detergent	<0.001	<0.001
Chemical Oxygen Demand	<0.5	<0.5
DERIVED VALUES		
Hardness as $CaCO_3$	38.8	53.2
Alkalinity as $CaCO_3$	26.5	36.5
Total Solids:		
Residue at 180°C	70.5	94.3
PHYSICAL MEASUREMENTS		
Conductivity (micromhos)	124	170
pH	7.3	7.1
Turbidity (units)	1	1
Radioactivity (micromicrocuries/liter)		
Alpha	N.D.**	0.2 ± 0.5
Beta	5 ± 5	14 ± 5

* Bicarbonate and carbonate are calculated from the pH and total alkalinity

** N.D. - none detected

ELECTRICAL CONDUCTIVITIES OF WATER DELIVERED TO CONSUMERS

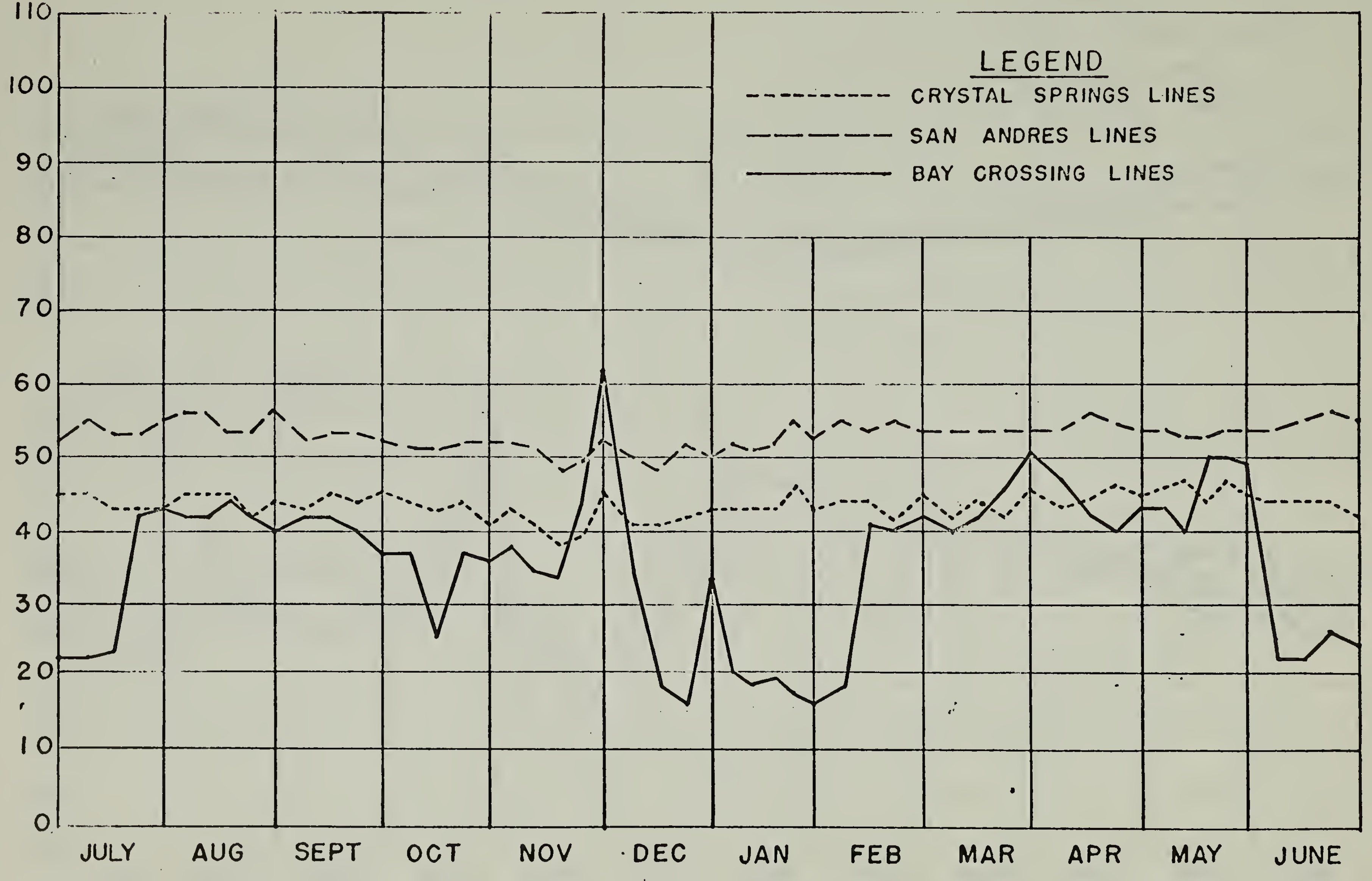
1965- 1966



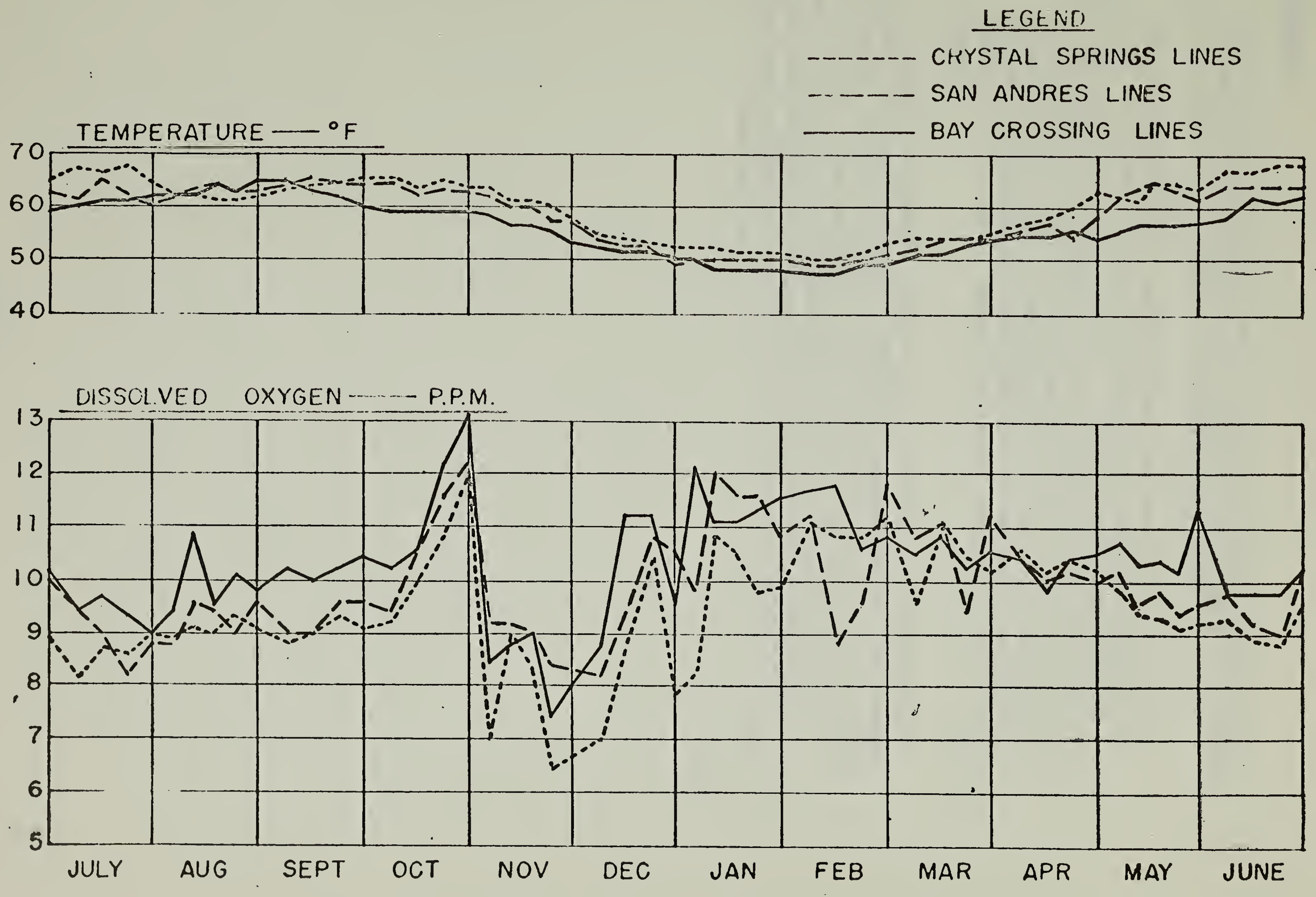
NOTE:
The conductivities (K) multiplied by 0.55 approximates the total dissolved solids in these waters in p.p.m.

HARDNESS OF WATER
DELIVERED TO CONSUMERS 1965 — 1966

(MONTHLY AVERAGES--PARTS PER MILLION AS $CACO_3$)



TEMPERATURE AND DISSOLVED OXYGEN OF WATER DELIVERED TO CONSUMERS 1965——1966



CIVIL DEFENSE:

The Division Manager was appointed Chief of the Water Division of the Utilities Service for the Operational Area Civil Defense by the General Manager of Public Utilities.

The radioactivity monitoring instruments located at the Pulgas Meter House and in the Millbrae Laboratory were in operation for a portion of the year. These units provide a continuous record of the level of radioactivity in the water in the Bay Crossing and Crystal Springs pipelines. In addition to the data provided by these instruments, a total of 158 radioactivity assays were made by the Laboratory on water samples from all parts of the water supply system, rainfall water samples, and air samples.

Frequent attempts were made to obtain matching Civil Defense funds for the emergency standby equipment in the Sunol and San Antonio Pump Stations, under construction in the latter part of the year. The request was approved by the Director of the Disaster Corps of San Francisco, the California Disaster Office, and the Region 7 offices of the U. S. Civil Defense Council, but was rejected by the U. S. Office of Civil Defense Mobilization in Washington, D. C.

WATER SOLD IN SUBURBAN AREA

FISCAL YEAR 1965 - 1966

	CUBIC FEET Total for Year	M.G.D.	CHARGE Total for Year
SAN MATEO COUNTY			
MUNICIPAL UTILITIES			
City of Redwood City	331,515,100	6.79	$ 512,940.85
City of Burlingame	211,299,000	4.33	337,072.94
Belmont County Water District	138,953,200	2.85	216,364.66
North Coast County Water Dist.	130,238,100	2.67	202,786.17
Town of Hillsborough	121,613,400	2.49	200,710,71
Menlo Park Municipal Water Dist.	119,242,800	2.44	193,316.90
City of San Bruno	113,899.700	2.33	182,444.63
City of Millbrae	112,690,400	2.31	183,382.97
East Palo Alto Water Dept.	92,258,200	1.89	145,399.06
City of Daly City	40,925,400	0.84	73,481.44
Estero Municipal Water Dist.	15,483,800	0.32	27,539.94
Dimond Public Utility Dist.	14,261,300	0.29	26,215.37
City of Brisbane	11,826,100	0.24	23,192.09
Coastside County Water Dist.	11,635,700	0.24	20,896.38
Guadalupe Valley Impr. Dist.	3,868,000	0.08	9,944.25
Palomar Park Muni. Impr. Dist.	2,770,000	0.06	6,184.78
Westborough County Water Dist.	1,619,500	0.03	4,992.86
Skyline County Water District	971,400	0.02	3,153.63
Cordilleras Mutual Water Assn.	373,800	0.01	1,087.87
Los Trancos	20,400	0.01	296.56
Airport	56,567,900	1.16	100,849.96
TOTAL MUNICIPAL UTILITIES	1,532,033,200	31.40	2,472,254.02
Other Water Sold	1,503,583,400	30.81	2,416,762.67
TOTAL SAN MATEO COUNTY	3,035,616,600	62.21	$4,889,016.69

(continued)

WATER SOLD IN SUBURBAN AREA

FISCAL YEAR 1965-66

(Continued)

	CUBIC FEET Total for Year *	M.G.D.	CHARGE Total for Year
SANTA CLARA COUNTY			
MUNICIPAL UTILITIES			
City of Palo Alto	656,337,000	13.45	$ 997,294.63
City of Sunnyvale	335,999,900	6.89	519,566.61
City of Mountain View	201,798,100	4.14	313,725.76
Milpitas County Water District	140,701,100	2.88	218,803.44
Purissima Hills Cty. Water Dist.	30,829,200	0.63	50,811.46
TOTAL MUNICIPAL UTILITIES	1,365,665,300	27.99	2,100,201.90
Moffett Field	70,862,200	1.45	108,945.93
Other Water Sold	2,208,000	0.05	6,267.27
TOTAL SANTA CLARA COUNTY	1,438,735,500	29.49	$2,215,415.10
ALAMEDA COUNTY			
MUNICIPAL UTILITIES			
Hayward Municipal Water System	524,288,700	10.74	$ 800,280.75
Alameda County Water District	94,197,900	1.93	164,095.89
TOTAL MUNICIPAL UTILITIES	618,486,600	12.67	964,376.64
Other Water Sold	69,730,000	1.43	126,116.46
TOTAL ALAMEDA COUNTY	688,216,600	14.10	$1,090,493.10
TOTAL WATER SOLD SUBURBAN AREA	5,162,568,700	105.80	$8,194,924.89

* These quantities are measured by the consumers' meters and for this fiscal year an average of about 7.4% must be added in order to determine the quantities of water required to be produced and released for consumption in each case. This is true for all quantitites of water shown in this "Distribution and Consumption" section of the Annual Report.

DISTRIBUTION AND CONSUMPTION

GENERAL:

Within the City of San Francisco the Water Department distributes and delivers water directly to its many consumers. Outside of San Francisco customers buying water from the Department are generally districts or cities which take delivery at the transmission mains, with distribution of the water to consumers beyond the point of delivery being through the customer's facilities. However, the Department distributes water in Garden Village in the northern part of San Mateo County and in Sunol, Alameda County, both being obligations of long standing.

CITY RESERVOIRS:

For a number of years, the East Basin of Stanford Heights Reservoir has presented a continuous leakage problem along the north wall. Because of this, the basin has been shut down periodically for inspection by the Engineering Division and minor repairs made as necessary. Under this policy, the basin was shut down during September of 1965. Varying degrees and types of repairs have been recommended including replacement of the existing roof and supports. Cost studies are now being prepared to permit the necessary work to be done under contract.

Although this basin was shut down during September, materials needed to stop leakage were not readily available and the basin was restored to service pending their arrival. Following procurement of materials and temporary personnel necessary to form a work crew, the basin was again taken out of service on December 1st. After repairing the most critical areas, the basin was restored to service on March 25, 1966, after almost four months of maintenance work.

In line with Department policy concerning major reservoirs, the South Basin of Sunset Reservoir was isolated and drained during the middle of January 1966 for inspection, cleaning and repair. Minor but effective repairs resulted in the virtual elimination of sporadic leakage emanating from this basin. The reservoir was restored to service during the latter part of April following three months of cleanup and repair work.

FEEDER MAINS:

The volume of service maintenance work has increased sharply during the past five years. Where prior to 1962, average production was about 6,000 separate jobs, the total has now increased to over 16,000 during the past fiscal year. Manpower prior to 1962 for performance of this work amounted to an average of four full time repair crews. Since 1962, increases in the workload have required an average of six full time repair crews. During the latter part of the fiscal year, it was found

that six crews were not able to keep abreast of the daily workload without excessive use of overtime. Since service maintenance cannot be backlogged or delayed due to the potential damage and liability factors, plans were made to establish a night shift of three repair crews between the hours of 3:30 and 10:30 PM effective on or about July 5, 1966. Through this proposed procedure, it is anticipated that expenditure of overtime funds will be reduced and that repair of leaks as well as the handling of other emergency situations will be performed with reduced liability and some saving in overall operating costs.

Routine extensions were made of 4, 6 and 8-inch cast iron mains during the year, both under contracts and by the forces of the Department.

Again this year the program for replacing inadequate small mains with larger ones was continued. This work was closely coordinated with the street reconstruction and resurfacing program of the Department of Public Works.

of the 42,011 feet of pipe laid in the City during the year, 28,590 feet were 6-inch and 8-inch which amounts to 68.1% of the total. There 18,409 feet of 4-inch and smaller pipe in the City Distribution system removed or abandoned, most of it being replaced with 6 and 8-inch cast iron pipe.

Pipe tables showing lengths of various sized pipe laid, removed or abandoned, and totals in the City system together with a record of the various types and sizes of valves, are to be found in the Appendix.

PUMP STATIONS:

All pumping stations in the City, which are in current use, operated without any serious trouble.

SERVICES AND METERS:

Within the San Francisco City Distribution Division there were 1,085 orders issued for new services during the fiscal year and, in addition, there were 2,724 orders for renewal of service issued resulting from inspections which disclosed an inadequate supply of water. In addition to the above, 2,065 services were replaced which were found to be in bad condition by the City Distribution Division. There was a total of 4,858 services renewed during the year. At the end of the year there were 162,121 meters in service in San Francisco, including those temporarily shut off.

Thirty seven new suburban services were installed during the year and meters were installed thereon ranging in size from

5/8-inch to 12-inch. Thirty three services were discontinued. The net change was an increase of four suburban services, leaving a total of 675 as of June 30, 1966. On that date there were 955 meters in service in the suburban area, including those temporarily shut off.

On June 30, 1966 there were 699 active accounts in the suburban area and 156,807 in San Francisco. These do not include temporarily shut off services which number six in the suburban area and 2,952 in San Francisco, making a total of 2,958. The total number of accounts in the system on June 20, 1966 was 160,434.

The District Servicemen made over 94,144 calls during the year. These calls were for the purpose of turning on or shutting off water and reading meters for closing bills, inspection of usage, investigation of water supply, supplying water to ships and carrying out orders originating from the Collection Department.

All meter readings continue to be audited and, where any of the readings appear to be at variance with the usage normally expected, billing is usually held up pending an inspection by a District Water Serviceman. This procedure continues to find favor with our customers who have larger than normal usage, for they appreciate our interest in checking on the larger usage and, where leaks are found, they can make immediate repairs, thereby arresting further large billing due to leakage. This practice also locates meters that fail to properly register the water consumed.

Tables "A" through "F" following reate to services and meters in San Francisco and Suburan areas as indicated:

TABLE "A"
NEW DOMESTIC SERVICES*

SAN FRANCISCO

Service Size	1961-62	1962-63	1963-64	1964-65	1965-66
3/4"	362	463	381	368	336
1"	371	470	517	395	439
1½"	94	120	112	105	87
2"	81	122	102	61	64
3"	24	12	22	8	11
4"	55	38	20	17	13
6"	19	5	6	5	4
8"	16	3	3	3	-
12"	-	1	-	-	-
Total	1,022	1,234	1,163	962	954
%3/4"	35.4	37.5	32.8	38.3	35.2
%1"	36.3	38.1	44.5	41.1	46.0

*Not including Fire Sprinkler Services.

SUBURBAN

5/8"	9	12	7	7	4
3/4"	11	3	5	4	2
1"	0	1	6	2	3
1½"	0	1	1	4	3
2"	5	4	10	10	15
Larger than 2"	5	9	16	10	10
Total	30	23	45	37	37
Additional Services					
Enlarged	5	7	4	10	4
Reduced	0	0	0	0	2
Home (Removed)	34	53	49	29	33

TABLE "B"

METERS SET

SAN FRANCISCO

Meter Size	1961-62	1962-63	1963-64	1964-65	1965-66
5/8"	1,046	863	1,175	1,058	673
3/4"	130	275	125	186	230
1"	135	165	183	183	106
1½"	68	107	108	127	65
2"	191	211	203	165	112
3"	-	-	-	-	-
4"	-	-	-	1	-
6"	-	2	-	1	-
8"	-	1	1	-	-
Total	1,570	1,624	1,795	1,721	1,186
%5/8"	66.6	53.1	66.5	61.5	56.7
%3/4"	8.3	16.9	7.0	10.8	19.4
%1"	8.6	10.2	10.2	10.6	8.9
%1½"	4.3	6.6	6.0	7.4	5.5
%2"	12.2	13.0	11.3	9.6	9.5

TABLE "C"

METER SET CHANGES*

SAN FRANCISCO

Meter Size	1961-62	1962-63	1963-64	1964-65	1965-66
5/8"	4,215	4,044	4,549	4,491	6,249
3/4"	912	821	661	828	604
1"	325	312	339	303	283
1½"	167	114	150	125	128
2"	187	173	221	189	173
Total	5,806	5,464	5,920	5,936	7,437
%5/8"	72.6	74.0	76.8	75.7	84.0
%3/4"	15.7	15.0	11.2	13.9	8.1
%1"	5.6	5.7	5.7	5.1	3.8

*For all causes, but mainly for "no goes."

TABLE "D"

METERS HOME*

SAN FRANCISCO

Meter Size	1961-62	1962-63	1963-64	1964-65	1965-66
5/8"	623	751	1,185	795	824
3/4"	14	21	75	26	23
1"	23	28	42	32	50
1½"	20	27	24	19	29
2"	44	85	70	47	51
3"	-	-	-	-	-
4"	-	-	-	-	-
Total	724	912	1,396	919	977
%5/8"	86.0	82.3	84.9	86.5	84.3
%3/4"	1.9	2.3	5.4	2.8	2.4
%1"	3.2	3.1	3.0	3.5	5.1

*Meter brought to the shop and not replaced.

TABLE "E"

FIRE SPRINKLER SERVICES INSTALLED

SAN FRANCISCO

Service Size	1961-62	1962-63	1963-64	1964-65	1965-66
1"	-	2	1	4	8
1½"	-	1	6	14	22
2"	6	15	31	39	32
3"	2	-	15	11	16
4"	41	59	48	37	50
6"	13	24	34	24	18
8"	14	12	14	17	5
10"	-	-	2	-	-
12"	-	-	-	1	1
Total	76	113	151	147	151

TABLE "F"

SERVICE RENEWALS

SAN FRANCISCO

Service Size	1961-62	1962-63	1963-64	1964-65	1965-66
3/4"	1,977	2,604	2,299	1,621	1,783
1"	1,253	1,304	1,795	2,488	2,936
1½"	126	113	116	98	109
2"	37	56	73	41	26
3"	3	7	9	7	1
4"	-	1	-	2	2
6"	-	-	1	1	1
Total	3,396	4,085	4,293	4,258	4,858
%3/4"	58.2	63.7	53.6	38.1	36.7
%1"	36.9	31.9	41.8	58.4	60.4

MAINTENANCE AND OPERATION:

A planned program of gate valve inspection and repair was inaugurated in July 1960. This continuing program will insure operable valves, thereby reducing field costs and the Department's liability in damage claims and also will insure reliable valve operation during emergencies such as fires and earthquakes. Under the original program, a total of 4,902 gate valves and stopcocks were inspected. In connection with the district flushing program during this past year a total of 6,000 valves were inspected.

A planned program of flushing distribution mains on an areawide basis to remove sedimentation and products of corrosion, in order to improve the quality of water delivered to consumers, was initiated during fiscal year 1962-63. This continuing program, as currently scheduled, will result in mains being thoroughly flushed about every five years. During fiscal year 1965-66, a total of 822,800 feet of mains of various sizes up to 20-inch diameter, inclusive, were flushed. In addition to area flushing, 229 individual spot flushing operations were carried out. Of these 159 were regular monthly flushings carried out to prevent the accumulation of sediment and 70 operations were the result of dirty water complaints.

The various shops at the Corporation Yard continued with routine maintenance and repair work and, in addition to this, the facilities and personnel of the shops were available at all times for emergency work throughout the system. During the year this service has saved much time and expense on numerous occasions when equipment and facilities failed and the making of emergency repairs was necessary.

All maintenance and repair of the Department's various automobiles, trucks and equipment used within the City was carried out in these shops. Body and fender work, major repair work, and painting of vehicles was performed for all divisions of the Department.

The Yard Office at 1990 Newcomb Avenue again carried out a variety of assignments involving the handling and control of materials and supplies, tools and equipment, timekeeping, cost analysis and other accounting matters, along with the processing of orders relating to the operation, maintenance and construction of the City Distribution System.

The Meter Shop continued making repairs, rebuilding and testing various size and types of meters used to measure the consumer's use of water. During the year, 7,437 meters in service were replaced for all causes, but mainly because of under registration. All meters are tested for accuracy before being installed or reinstalled, and in many cases are rebuilt or repaired before being tested.

Leak surveys were conducted on 190 miles of water mains in 12 districts within San Francisco. 185 leaks were located and repaired thoough which about 1,032,000 gallons of water were lost each day. Checks were made on large industrial consumers to detect unauthorized use of unmetered water and all commercial and industrial meters over three inches in diameter were tested.

During the 1965-66 Fiscal Year, the Alameda division had eleven transmissio mains shutdown as follows:

BDPL No. 1	2
BDPL No. 2	3
Calaveras 44" P/L	3
Ala. Cr. Syphon #1	2
ALA. Cr. Syphon #2	1

On June 9, 1966, the Sunol Valley Filtration Plant was placed into service with a flow of 20 mgd.

A maintenance and service check has been done on BDPL Nos. 1 & 2 appurtenances (gate valves, air valves and blow-offs).

A leak in the 30" Pleasanton P/L, one in the 12" Sunol Supply line, three in the 3" water line to the Sunol chlorine building and one in the BDPL No. 2 were repaired.

Sections of the 44" Niles-Irvington Pipeline (ffom Niles Reservoir southwest) was cleaned, bents were replaced and the pipe treated to arrest deterioration. This has also been done on BDPL Nos. 1 & 2 at all Alameda County Flood Control Ditch Crossings.

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1965-66

No.	Area, Utility or District	Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
	San Mateo County				
1	Bayshore City (Dimond Utility District)	14,261,300	0.29	0.30	336
2	Brisbane County Water Dist.	11,826,100	0.24	0.25	279
41	Guadalupe Valley Muni. Impr. District	3,868,000	0.08	0.08	91
3	Daly City	40,925,400	0.84	0.86	965
4	Colma (Broadmoore, Calif. Water Serv. Co.)	29,193,700	0.58	0.59	665
5	South San Francisco (Calif. Water Serv. Co.)	283,440,700	5.81	5.96	6,679
6	North Coast Co. Water Dist.	130,238,100	2.67	2.74	3,069
7	Coastside Co. Water Dist.	11,635,700	0.24	0.25	274
8	San Bruno	113,899,700	2.33	2.39	2,684
9	S. F. International Airport Sold 56,567,900 Cu.Ft. S.F. Use 20,585,600 " "(2)	77,153,500	1.58	1.62	1,818
10	Millbrae	112,690,400	2.31	2.37	2,656
11	Burlingame	211,299,000	4.33	4.45	4,980
12	Hillsborough	121,613,400	2.49	2.56	2,866
13	Crystal Springs Golf Club (2)	11,737,400	0.24	0.25	277
14	San Mateo (Calif. Water Serv. Co.)	530,792,600	10.88	11.17	12,509
15	Belmont County Water Dist.	138,953,200	2.85	2.93	3,275
16	San Carlos (Calif. Water Serv. Co.)	170,396,200	3.49	3.58	4,016

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1965-66

(continued)

No.	Area, Utility or District	Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
	San Mateo County (Cont'd)				
44	Westborough Co. Water Dist.	1,619,500	0.03	0.03	38
17	Redwood City	331,515,100	6.79	6.97	7,813
	Redwood City (Calif. Water Serv. Co.)	31,648,000	0.65	0.67	746
	Cordilleras Mut'l Water	373,800	0.01	0.01	9
	Palomar Pk. Co. Water Dist.	2,770,000	0.06	0.06	65
18	Woodside (Calif. Water Serv. Co.)	75,881,400	1.56	1.60	1,788
19	To Bear Gulch District (Calif. Water Serv. Co.)	115,442,900	2.36	2.42	2,721
20	Menlo Park Muni. Water Dist.	119,242,800	2.44	2.50	2,810
	Menlo Park (Calif. Water Serv. Co.)	194,210,700	3.98	4.09	4,577
	Friendly Acres (Clyde Henry)	26,900,800	0.55	0.56	634
21*	East Palo Alto Water Dept.	92,258,200	1.89	1.94	2,174
40	Skyline County Water Dist.	971,400	0.02	0.02	23
43	Estero Municipal Improvement District	15,483,800	0.32	0.33	365
45	Los Trancos	20,400	0.01	0.01	1
22	City of San Francisco				
	County Jail (2)	30,395,000	0.62	0.64	716
	Public Welfare (2)	576,900	0.01	0.01	14
	Hassler Health Home (2)	2,837,600	0.06	0.06	67
	Other Water delivered in San Mateo Co.	46,676,400	0.95	0.98	1,100
	Total for San Mateo Co.	3,101,749,100	63.56	65.25	73,100

*Formerly Ravenswood Water Dist.

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1965-66

(continued)

No.	Area, Utility or District	Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
	Santa Clara County				
23	Palo Alto	656,337,000	13.45	13.81	15,468
24	Purissima Hills Co. Water Dist.	30,829,200	0.63	0.65	727
25	Mountain View	201,798,100	4.14	4.25	4,756
26	Moffett Field	70,862,200	1.45	1.49	1,670
27	Sunnyvale	335,999,900	6.89	7.07	7,919
28	Agnew State Hospital	1,346,200	0.03	0.03	31
29	Milpitas Co. Water Dist.	140,701,100	2.88	2.96	3,316
30	Other Water delivered in Santa Clara County	961,800	0.02	0.02	23
	Total for Santa Clara Co.	1,438,835,500	29.49	30.28	33,910
	Alameda County				
31	Alameda County Water Dist.	94,197,900	1.93	1.98	2,220
32	Newark (various consumers)	19,442,200	0.40	0.41	458
33	Hayward Muni. Water System	524,288,700	10.74	11.03	12,356
42	Atomic Energy Commission Livermore (2)	22,185,800	0.45	0.46	523
34	Sunol				
	Domestic Supply	2,627,200	0.05	0.05	62
	Water Dept. Lands (2) From Transmission Lines	43,467,800	0.89	0.92	1,025
	Water Dept. Lands (2) Est'd Not From Transmission Lines	7,169,900	0.15	0.15	169
35	Vallecitos	36,366,900	0.75	0.77	857
36	Castlewood Country Club	2,207,800	0.05	0.05	52

DELIVERIES AND CONSUMPTION
FROM
SAN FRANCISCO WATER DEPARTMENT SOURCES
FISCAL YEAR 1965-66

(continued)

No.	Area, Utility or District	Metered Cu.Ft. Year	Delivery MGD	Consumption(1) MGD	Consumption(1) Ac.Ft. Year
	Alameda County (Cont'd)				
37	Discontinued June 30, 1960	-	-	-	-
38	Pleasanton Well Field Agricultural Use (2) Estimated	59,795,000	1.22	1.25	1,409
39	Other water delivered in Alameda County	53,012,800	1.09	1.12	1,249
	Total for Alameda County	864,762,100	17.72	18.19	20,380
	Total for San Mateo, Santa Clara and Alameda Counties	5,405,346,700	110.77	113.72	127,390
	San Francisco County				
	San Francisco	4,260,139,500	87.30	98.96	110,858
	From Lake Merced and Golden Gate Park Wells (2) Estimated	55,347,600	1.14	1.29	1,440
	Total for San Francisco County	4,315,487,100	88.44	100.25	112,298
	Total for San Francisco Water Department System	9,720,833,800	199.21	213.97	239,688

(1) Consumption is system input. The difference between "consumption" and "metered delivery" consists of system losses and uses, including leakage, losses due to pipe breaks, under-registration of meters, water used at hydrants that is not billed (fire use in San Francisco averaged 0.09 MGD), blowoff water, water used for Water Department operating purposes, evaporation from distribution reservoirs and other similar losses.

(2) This water is not included in the tabulation of water sold.

REVENUE

WATER SALES:

Sales of Water to our Customers during the fiscal year 1965-66 grossed $19,443,508 including $1,225,424 of sales to nonpaying Municipal Departments The gross amount includes $26,628 of allowances to customers and $32,500 in allowances made on resale accounts in accordance with a Superior Court ruling; these two items reduce the gross sales by $59,128 so that net sales amounted to $19,384,380. Our policy is to allow credits on customers' bills where leakage occurred in house piping or fixtures when the customer promptly makes the necessary repairs.

This year's sales show an increase over the previous year of $815,858 or 4.4%. Net Sales in San Francisco, including $1,019,386 to nonpaying Municipal accounts, amounted to $11,016,001 or 56.8% of the total. Suburban Net Sales accounted for $8,368,379 or 43.2% of the total, including $206,038 to nonpaying City of San Francisco Departments.

Included in the above was $5,532,278 derived from sale of water to Municipal Utilities and Water Districts in the Suburban Area. This is an increase of $556,719. Revenue from sale of water to private utilities amounted to $2,276,258, an increase of $151,719.

Customers' Accounts Receivable showed a balance of $1,801,368 due the Department on June 30, 1966. This includes $95,854 unpaid on old "reduced rate contract" accounts, not yet settled. Collections for the year were $18,314,115, an increase of $1,289,586. There were 977,401 bills issued during the year, of which 912,870 were for bi-monthly accounts and 64,531 for monthly accounts.

Uncollectible bills totaled $16,564, being 0.09% of total charges. The Suspense Balance, consisting of "Closed" accounts awaiting collection or write-off, was $1,577 on June 30, 1966.

OTHER INCOME:

Revenue from rentals, including crop shares and royalties, amounted to $450,162 for the year, which is $10,686 more than the previous year.

The walnut orchard was leased on May 1, 1959 for private operation on percentage rental. For the crop year 1965 the City received $23,017 on this lease, a decrease of

$1,983 from the previous year. The walnut crop year extends from December 1 to November 30.

Interest on bank balances increased over the previous year from $114,472 to $130,158.

Miscellaneous income was $454,502.

CLAIMS

Claims filed by the Department during the year against others, principally street work contractors who damaged our facilities, amounted to 48 in number for a total of $14,827 which, together with 38 claims in amount of $29,542 on hand at the beginning of the year, added up to 86 claims processed totaling $44,369. Some 48 claims were processed against others for a total sum of $13,906. These 48 were settled for $10,654 out of the original claims amount of $13,906 or 77% recovery. Claims against others pending on June 30, 1966 were 38 in number for a total amount of $30,462.

During the year 160 claims in the total amount of $659,002 were filed against the Department. Including those pending at the beginning of the year, a total of 206 claims in the total amount of $863,489 were processed. 41 claims totaling $310,319 were denied and another 102 claims originally totaling $236,801 were paid and/or settled for $47,341. Saving on claims processed amounted to $499,779 or 91%. On June 30, 1966, 63 claims of this type in the sum of $316,369 remained, including 12 "rate case" claims amounting to $21,667.

In addition to the foregoing, the policy of investigating dangerous conditions of the Department's facilities and instances of damage where no formal claims were filed, was continued. The former is in line with the policy of accident prevention and the latter for protection in case formal claims are subsequently made.

The investigations in many instances require an engineering study to determine what the Department should do regarding the claim. Remedial work is required in some of the cases.

ADDITIONS, BETTERMENTS, RECONSTRUCTION AND REPLACEMENTS

During the fiscal year this Department handled 61 formal construction contracts valued at $15,532,849. Forty-three of the 61 were new contracts awarded during the year, of which 30 were completed, 7 were under construction, and 6 were not started. Eighteen contracts were carried over from the previous year and were completed during the fiscal year.

The money actually spent on contracts during the fiscal year ending June 30, 1966, including the engineering and inspection costs bid by the contractor on the cast iron main contracts, was approximately $7,672,908.

Major emphasis during the year focused on 1961 Municipal Water Bond fund projects, and the completion of the first water treatment plant in the history of the Water Department.

Under Bond Fund projects, construction was underway on the $5,000,000 Bay Division Pipeline No. 4, Section A, and Alameda Creek Siphon No. 3, both sections of 98-inch diameter prestressed concrete cylinder pipe which is the largest diameter pipeline to date in our system. The $822,000 78-inch pipeline from the Filtration Plant to Alameda Creek Siphon was completed and construction on the $1,020,000 San Antonio and Sunol Pipelines and the $1,258,000 San Antonio and Sunol Pumping Stations has just started. Plans and specifications for the $8,500,000 Crystal Springs Bypass Tunnel were submitted to the Public Utilities Commission for approval. Bids for this project are expected in August 1966.

The Sunol Valley Filtration Plant (San Antonio-Calaveras Water Treatment Plant) which was partially financed by bond fund was completed in May 1966 at a cost of $3,929,588.66. This plant will be able to treat water from Calaveras Reservoir, San Antonio Reservoir and the Sunol underground sources.

Projects financed from revenues included completion of the $447,000 McLaren Park Tanks (two at 4-million gallon capacity each); remodeling of the third floor at 425 Mason Street Building to house the new data processing center and the beginning of construction of the $120,000 McLaren Park Pump Station.

Bids were received for installation of a new elevator at the Water Department Building in June 1966. Construction was expected to start in August 1966 for this $80,000 project.

To accommodate State Freeway projects, the relocation of Crystal Springs Golf Course was completed at a cost of $480,000;

the relocation of the 54-inch San Andreas Pipeline at Crystal Springs Road, San Bruno, was completed at a cost of $142,000 and the relocation of a portion of the Crystal Springs Aqueduct was completed at a cost of $87,100. These projects were completed at State's cost under Utilities Agreements. The relocation of our facilities in the watershed to accommodate Junipero Serra Freeway is completed.

The normal functions of the Engineering Division which also require considerable time and effort of this division include: preliminary engineering and surveys, preparation of plans and specifications and cost estimates, inspection and management of contracts, special studies, reports on construction progress, liaison work with other departments and organizations, budget work and taxes, preparation of revocable permits, property description and conditions for land sales, purchases and encroachments, preparation of exhibits for court cases and hearings and miscellaneous aid in claims, monumenting of right of ways and property lines, electrolysis control, operational engineering services and photostatic and photographic services.

Considerable staff time was spent in discussions with representative of the Division of Highways, BARTD, City and County agencies, other organizations and interested individuals on relocation of utilities because of streets, freeways, flood control channels and other utility crossings and interference of Water Department facilities and in preparation of permits or contracts leading to the solution of these relocation problems. Of major importance to the Department was the negotiation and work involved in utility relocation for the Embarcadero Freeway, the Junipero Serra Freeway, the Sunol-Dublin Freeway and the Mission San Jose to San Jose Freeway.

The Junipero Serra Freeway through our watershed involved making satisfactory arrangements with the State to protect the lakes from high turbidity during the freeway construction. The Division spent considerable time in preparing maps and detailed analysis to present an alternate route for the freeway through the watershed south of Ralston Avenue.

During this year several Professional Services Agreements were arranged and work under existing agreements was continued. This type of agreement is used for the performance of work that requires specialized experience and personnel or for work that the Department cannot accomplish on schedule because qualified personnel are already engaged on projects of high priority.

Professional services contracts and agreements for the fiscal year are as follows:

1. Waste Water Survey - Pitometer Associates
2. Professional Services, Plans, Specifications, Estimates and Consulting Services during Construction of the San Antonio - Calaveras Water Filtration Plant - Joint Venture of Brown and Caldwell and James M. Montgomery, Consulting Engineers.
3. Professional Services Relating to the San Andreas Water Filtration Plant and the Crystal Springs Water Filtration Plant - Joint Venture of Brown and Caldwell and James M. Montgomery, Consulting Engineers.
4. Professional Services in Connection with Boring and Soil Tests for Alameda Creek Siphon Connections - Woodward-Clyde-Sherard and Associates, Consulting Soil and Foundation Engineers.
5. Professional services for Crystal Springs Bypass Tunnel · Bechtel Corp.
6. Professional Services - Study for Central Control and Information System - Gordon Herkenhoff and Associates, Inc.

On July 28, 1964, a contract was awarded to The Pitometer Associates for the location of Major underground leaks from mains and services and to determine the interior conditions of several mains. Work under this contract was completed September 25, 1965 at a total cost of $20,000.

Leaks surveys were conducted on 190 miles of water mains in 12 districts. One Hundred Eighty-Five leaks were located and repaired, reducing waste a total of 1,032,000 gallons per day. At the minimum rate for water sold within the city limits, the repair of these leaks represented an annual saving of approximately $68,112.

On September 14, 1965 a new contract was awarded to The Pitometer Associates for the same type of work. The approved cost of work under this contract to June 30, 1966 was $16,920.

Under the new contract for the period July 1, 1965 to June 30, 1966, leak surveys were conducted on 188 miles of water mains in 10 districts. Sixty eight leaks were located and repaired reducing waste a total of 455,000 gallons per day. At the minimum rate for water sold within the City Limits, the repair of these leaks represented an annual saving of approximately $30,030.

The six major projects authorized by the $115,000,000 Water Supply Improvement Bond Issue at the 1961 election were proceeding on a revised schedule. Construction of the 78" pipeline from Siphon to Filtration Plant and Sunol Valley Filtration Plant was completed during the year.

The remaining projects or units of projects and their tentative beginning construction dates are as follows:

1.		Bay Division Pipeline No. 4	
	1966	Section A + Alameda Creek Siphon No. 3	$ 5,100,000
	1966	Connections at Alameda Creek Portals	150,000
	1967	Section C	4,400,000
2.		San Antonio Dam Project	
	1966	San Antonio and Sunol Pumping Station	1,060,000
	1966	Dam to Siphon Pipeline	720,000
	1966	Sunol Pipeline	230,000
3.	1966	Bay Division Lines to Crystal Springs Lines Connection	2010 10,000,000
4.	1967	Crystal Springs to San Andreas Reservoir Pipeline and Pump Station Improvements	2,700,000
5.	1967	Crystal Springs Pipeline No. 3 Burlingame to Baden Section	3,300,000
6.	1968	Balboa Reservoir, Lining, Roof and Appurtenances - South Basin	3,000,000

FORMAL CONTRACTS

The work under formal contracts has been separated into two main categories: Replacements and Additions to City Pipe System, and Replacements and Additions to supply, transmission, treatment and miscellaneous facilities. Forty contracts valued at $2,108,581 were for additions, replacements and relocations to the City pipe system and twenty-one contracts valued at $13,424,269 were for replacements and additions to supply, transmission, treatment and miscellaneous facilities. The contracts on the City pipe system include relocations required because of freeway construction, which work is performed at State expense except for certain credit allowances for depreciation of the replaced facility.

The 40 contracts for additions to the City Pipe System provided for the installation of about 52,100 feet of pipe. Most of this pipe was cast iron varying from 4" to 16" in diameter, approximately 80% of which was 6" and 8" in diameter. Not included was 221 feet of 44" steel pipe and the centerlining of 23,100 feet of 22", 30" and 36" steel pipe.

Contract No. 1014 - For the laying of 221 feet of 44" of steel main under Mission Street viaduct between Cayuga Ave. and Alemany Blvd. (Southern Freeway). The contract was awarded to the Glanville Construction Company on May 25, 1965 at a bid price of $24,733.00 and completed on September 17, 1965 at a cost of $26,384.50.

Contract No. 1122 - For the laying of 1,367 feet of 8" and 2,060 feet of 16" cast iron and 106 feet of 18" steel main in Iowa, Mariposa and other streets. The contract was awarded to Associated Pipe Line, Inc. on September 7, 1965 at a bid price of $67,445.00 and approximately 90% completed as of June 30, 1966 at a cost of $32,458.91.

Contract No. 1161 - For the laying of 279 feet of 6" cast iron mains in Gennessee Street between Mangels and Melrose Aves. The contract was awarded to Michael Murphy, Jr. on July 6, 1965 at a bid price of $4,743.60 and completed on August 19, 1965 at a cost of $4,325.86.

Contract No. 1162 - For the laying of 165 feet of 4" cast iron main in Castro Street between Duncan and 28th Streets. The contract was awarded to W. L. Fairey on July 20, 1965 at a bid price of $4,275.00 and completed on October 13, 1965 at a cost of $3,872.35.

Contract No. 1166 - For the laying of 1,380 feet of 6" cast iron mains in Bosworth Street between Lippard and Arlington Streets. The contract was awarded to Michael Murphy, Jr. on September 22, 1964 at a bid price of $16,687.80 and completed on August 6, 1965 at a cost of $17,203.30.

Contract No. 1177 - For the laying of 504 feet of 4" and 164 feet of 6" cast iron mains in Vulcan and Liberty Streets. The contract was awarded to Associated Pipeline, Inc., on May 4, 1965 at a bid price of $13,686.00 and completed on July 16, 1965 at a cost of $13,233.70.

Contract No. 1178 -For the laying of 27 feet of 2", 36 feet of 4", 466 feet of 6" and 1,453 feet of 8" cast iron mains in Bay Street between Van Ness Ave. and Polk Street and Union Street between Van Ness Ave. and Hyde Street. The contract was awarded to McGuire and Hester on April 20, 1965 at a bid price of $31,218.30 and completed July 21, 1965 at a cost of $34,298.70.

Contract No. 1184 - For the laying of 970 linear feet of 6" cast Iron Mains in Pacific Avenue between Leavenworth and Taylor Sts. The contract was awarded to The Lowrie Paving Co., Inc., on September 21, 1965 at a bid price of $21,444.30 and completed on November 19, 1965 at a cost of $17,399.04.

Contract No. 1185 - For the laying of 2,431 feet of 4" and 1,010 feet of 6" cast iron mains in Mira Glen Subdivision. The contract was awarded to W.L. Fairey on February 9, 1965 at a bid price of $26,291.00 and completed on September 27, 1965 at a cost of $26,431.58.

Contract No. 1193 - For the laying of 1,861 feet of 4" and 1,130 feet of 16" cast iron mains in Laguna Honda and Dewey Blvds. The contract was awarded to Michael Murphy, Jr. on March 16, 1965 at a bid price of $40,105.00 and completed on July 9, 1965 at a cost of $42,683.60.

Contract No. 1197 - For the laying of 66 feet of 8" ductile iron and 918 feet of 8" cast iron mains in 24th Street and Michigan Street. The contract was awarded to Michael Murphy, Jr. on April 20, 1965 at a bid price of $12,159.40 and completed on July 12, 1965 at a cost of $11,166.59.

Contract No. 1198 - For excavation and repaving of 375 water service renewals. The contract was awarded to Baldwin Warren Co., Inc. on April 20, 1965 at a bid price of $49,050.00 and completed on August 5, 1965 at a cost of $38,218.50.

Contract No. 1200 - For the laying of 198 feet of 8" ductile iron and 3,696 feet of 8" cast iron mains in 6th Street between Harrison and Townsend Sts. The contract was awarded to W. L. Fairey on June 8, 1965 at a bid price of $60,252.00 and completed on October 8, 1965 at a cost of $67,887.00.

Contract No. 1205 - For the laying of 912 feet of 6" cast iron main in Elsie Street between Eugenia and Esmeralda Avenues. The Contract was awarded to McGuire and Hester on July 6, 1965 at a bid price of $19,275.00 and completed on Jaunuary 6, 1965 at a cost of $17,599.50.

Contract No. 1206 - For the laying of 497 feet of 6" Cast iron main in Ripley Street between Peralta Avenue and Alabama Street. The contract was awarded to Michael Murphy, Jr. on August 3, 1965 at a bid price of $8,404.00 and completed on September 24, 1965 at a cost of $8,205.15.

Contract No. 1207 - Annual Paving contract, fiscal year 1965-66 for repaving of street and sidewalk openings. The contract was awarded to Pacific Pavements Co., Inc. on June 22, 1965 at a bid price of $330,950.00 and completed on June 30, 1966 at a cost of $248,154.43.

Contract No. 1211 - For the laying of 11,323 feet of 6" cast iron and 2,399 feet of 8" cast iron mains in St. Francis Woods. The Contract was awarded to Associated Pipeline, Inc. on March 1, 1966 at a bid price of $170,866.50 and was 96% complete on June 30, 1966 at a cost of $104,665.75.

Contract No. 1212 - For the laying of 1,318 feet of 16" ductile iron main in Woolsey, Dartmouth, Olmstead and Mansell streets. The contract was awarded to Louis L. Cima, Inc. on December 28, 1965 at a bid price of $65,185.00 and completed on April 15, 1966 at a cost of $64,951.90.

Contract No. 1213 - For excavation and repaving of 118 water service renewals. The contract was awarded to Pacific Pavements Co., Ltd., on September 14, 1965 at a bid price of $17,635.00 and completed on November 15, 1965 at a cost of $14,727.95.

Contract No. 1214 - For the laying of 277 feet of 4" cast iron, 1,653 feet of 6" cast iron and 2,825.2 feet of 8" cast iron mains in Geary, Leavenworth and other streets. The contract was awarded to the Lowrie Paving Company on March 15, 1966 at a bid price of $35,456.70 and completed on May 20, 1966 at a cost of $34,718.61.

Contract No. 1215 - For the laying of 727 feet of 4" cast iron and 825 feet of 6" cast iron mains in Minerva and Summit Streets between Margaret and Plymouth Aves. The contract was awarded to W. L. Fairey on November 16, 1965 at a bid price of $22,646.00 and completed on March 28, 1966 at a cost of $22,478.00.

Contract No. 1216 - For the laying of 436 feet of 4" cast iron mains in Harold Avenue and Getz Street south of Grafton Ave. The contract was awarded to Associated Pipeline, Inc. on January 25, 1966 at a bid price of $9,607.00 and completed March 11, 1966 at a cost of $10,110.40.

Contract No. 1218 - For the laying of 90 feet of 4" cast iron and 3,038 feet of 6" cast iron mains in Elsie, Craut, Randall and other streets. The contract was awarded to McGuire and Hester on February 8, 1966 at a bid price of $53,363.00 and completed on May 6, 1966 at a cost of $52,320.85.

Contract No. 1222 - For the laying of 84 feet of 4" cast iron, 207 feet of 6" cast iron and 1,297 feet of 8" cast iron mains in Bosworth Street and Burnside Ave. The contract was awarded to Lowrie Paving Co., Inc. on January 18, 1966 at a bid price of $24,828.50 and completed on March 22, 1966 at a cost of $25,421.80.

Contract No. 1223 - For the cement mortar lining of 7,200 feet of 22" pipe, 9393 feet of 30" pipe and 6,479 feet of 36" pipe in Valencia St., 19th Ave. and Harrison Street. The contract was awarded to the United Concrete Pipe Corporation on November 16, 1965 at a bid price of $135,908.00 and completed on June 3, 1966 at a cost of $135,754.56.

Contract No. 1225 - For the laying of 680 feet of 4" cast iron and 356 feet of 6" cast iron mains in 27th Street between Noe and Castro Streets. The contract was awarded to McGuire and Hester on Feburary 8, 1966 at a bid price of $10,869.50 and completed June 15, 1966 at a cost of $10,362.70.

Contract No. 1227 - For the laying of 247 feet of 6" cast iron main in Tocoloma Ave. The contract was awarded to W. L. Fairey on December 28, 1965 at a bid price of $4,381.50 and completed on February 8, 1966 at a cost of $3,816.95.

Contract No. 1228 - For the laying of 117 feet of 6" cast iron and 306 feet of 8" cast iron mains in Valencia Street between Army and 26th Streets and 25th Street, east of Dolores Street. The contract was awarded to W. L. Fairey on January 25, 1966 at a bid price of $8,974.50 and completed on March 16, 1966 at a cost of $9,348.25.

Contract No. 1231 - For the excavation and repaving of 581 water service renewals. The contract was awarded to Pacific Pavements Co. Ltd., on January 11, 1966 at a bid price of $72,575.00 and completed on April 18, 1966 at a cost of $73,686.83.

Contract No. 1233 - For the laying of 72 feet of 8" ductile iron and 2,008 feet of 8" cast iron mains in Indiana, Tubbs, 23rd and other streets. The contract was awarded to Associated Pipeline, Inc. on December 21, 1965 at a bid price of $21,020.50 and completed on March 16, 1966 at a cost of $21,699.33.

Contract No. 1234 - For the laying of 36 feet of 8" ductile iron and 345 feet of 8" cast iron mains in Van Dyke Ave. between Ingalls and Hawes Streets. The contract was awarded to W. L. Fairey on January 18, 1966 at a bid price of $5,754.20 and completed on February 16, 1966 at a cost of $4,235.11.

Contract No. 1236 -For the laying of 285 feet of 4" cast iron and 22 feet of 6" cast iron mains in Roemer Way south of Brunswick Street. The contract was awarded to McGuire and Hester on January 25, 1966 at a bid price of $4,379.00 and completed on March 1, 1966 at a cost of $4,124.10.

Contract No. 1237 - For excavation and repaving of approximately 300 water service renewals in St. Francis Woods. The contract was awarded to Associated Pipeline, Inc. on March 1, 1966 at a bid price of $24,930.00 and completed on May 20, 1966 at a cost of $23,032.60.

Contract No. 1238 - For the excavation and repaving of approximately 590 water service renewals. The contract was awarded to Associated Pipeline, Inc. on February 8, 1966 at a bid price of $86,740.00 and completed on June 6, 1966 at a cost of $82,370.66.

Contract No. 1239 - For excavation and repaving of approximately 330 water service renewals. The contract was awarded to Baldwin Warren Co., Inc. on June 8, 1966 at bid price of $49,771.00. Work had not started as of June 30, 1966.

Contract No. 1241 - For excavation and repaving of approximately 300 water service renewals. The contract was awarded to the Lowrie Paving Co., Inc. on April 29, 1966 at a bid price of $53,874.00. Work was started on June 6, 1966 and was approximately 30.6% completed at a cost of $16,489.77 as of June 30, 1966.

Contract No. 1244 - For the laying of 54 feet of 6" ductile iron and 2,977 feet of 6" cast iron mains in Stockton, Clay and Wetmore Sts. The contract was awarded to McGuire and Hester on February 15, 1966 at a bid price of $74,615.50 and completed on June 2, 1966 at a cost of $78,241.25.

Contract No. 1246 - For the laying of 709 feet of 4" cast iron, 1,222 feet of 6" ductile iron and 1,492 feet of 6" cast iron mains in Carson, Head, St. Charles and other streets. The contract was awarded to Associated Pipeline, Inc. on May 24, 1966 at a bid price of $59,045.75. Work was started May 31, 1966 and was approximately 10% completed as of June 30, 1966.

Contract No. 1248 - For the laying of 8" and 12" cast iron mains in Arguello Blvd., Carl Street and Hillway Ave. The contract was awarded to W. L. Fairey on June 8, 1966 at a bid price of $29,965.00. Work had not started as of June 30, 1966.

Contract No. 1257 - Annual Paving contract for fiscal year 1966-67 for repairing of street and sidewalk openings. Contract was awarded to Baldwin Warren Co., Inc. at a bid price of $335,450.00. Work had not started as of June 30, 1966.

Replacements and Additions to Supply, Transmission, Treatment and Miscellaneous Facilities: (Includes Bond Projects)

A total of approximately $6,349,816.33 was spent during the fiscal year for work in this category.

The largest amount paid under a single contract in progress during the year was $2,616,641.60 for construction of Bay Division Pipeline No. 4, Section A, and Alameda Creek Siphon No. 3, Contract WD-1180.

The largest contract award was $5,034,520 for the same contract, WD-1180. Construction on this project started December 8, 1965.

Contract No. 1110 - For construction of 2 Four Million Gallon steel tanks in McLaren Park. The contract was awarded to Power Construction, Inc. on April 13, 1965 at an estimated bid price of $427,900.00 and was completed on May 17, 1966 at a cost of $446,691.15.

Contract No. 1128R - For construction of chlorination station at University Mound Reservoir - North Basin. The contract was awarded to C.W. Roen Construction Co. on December 29, 1964 at an estimated bid price of $21,450.00, and was completed on August 6, 1965 at a cost of $21,579.40.

Contract WD-1146 - For electrical and other work at valve locations, Bay Division Pipeline No. 4, Section B, Santa Clara County. The contract was awarded to Rosendin Electric, Inc., on March 2, 1965 at an estimated bid of $11,621.00 and was completed on July 9, 1965 at a cost of $11,576.15.

Contract WD-1148 - For construction and installation of valve near Newark Valve House (Hayward Service Connection-Alameda County). The contract was awarded to R. W. Johnston and Son on October 18, 1965 at an estimated bid of $16,436.00 and was completed on January 14, 1966 at a cost of $17,392.00.

Contract WD-1150 - For construction of San Antonio-Calaveras Water Filtration Plant. The contract was awarded to Fred J. Early Jr. on July 21, 1964 at an estimated bid of $3,874,000.00 and was completed on May 20, 1966 at a cost of $3,929,588.66.

Contract WD-1155 - For reconstructing portions of Crystal Springs Golf Course. The contract was awarded to Huettig and Schromm on August 4, 1964 at an estimated bid of $436,062.41 and was completed on October 15, 1965 at a cost of $479,463.33.

Contract WD -1163 - For installation of 42-inch Butterfly Valve on the 54-inch San Andreas Pipeline at Sneath Lane. The contract was awarded to Power Construction Company on November 30, 1965 at an estimated bid of $14,330.00 and was completed on March 16, 1966 at a cost of $15,503.20.

Contract WD-1180 - For construction of Bay Division Pipeline No. 4, Section A and Alameda Creek Siphon No. 3. The contract was awarded to Vido Artukovich and Son, Inc. on August 31, 1965 at an estimated bid of $5,034,520.00 and the date for completion is November 14, 1966. The contract cost through June 30, 1966 was $2,354,977.44.

Contract WD-1182 - For relocation of 54-inch San Andreas Pipeline at Crystal Springs Road, San Bruno. The contract was awarded to Baldwin Warren Co., Inc. on December 15, 1964 at an estimated bid of $135,842.00 and was completed on August 6, 1965 at a cost of $142,380.50.

Contract WD-1192 - For construction of McLaren Park Pump Station. The contract was awarded to S & Q Construction Co. on April 5, 1966 at an estimated bid price of $119,387.64. The contract cost through June 30, 1966 was $9,589.50.

Contract WD-1196 - For replacing Lighting Fixtures, Fifth Floor, 425 Mason St.,San Francisco. The contract was awarded to Decker Electric Co. on April 16, 1965 at a lump sum bid price of $4,886.00 and was completed on July 13, 1965.

Contract WD-1201 - To rehabilitate portion of Sunol Water District System, Alameda County. The contract was awarded to Earl W. Heple, Inc. on August 6, 1965 at an estimated bid of $9,451.75 and was completed on October 18, 1965 at a cost of $10,084.30.

Contract WD-1209 - For Alterations to Third Floor, 425 Mason St. Building, San Francisco. The contract was awarded August 17, 1965 to Kenneth K. Lind at an estimated bid price of $22,433.57 and was completed on March 1, 1966 at a cost of $22,505.22.

Contract WD-1210 - For San Antonio and Sunol Pumping Stations. The contract was awarded to C. Norman Peterson Company on May 10, 1966 at an estimated bid of $1,258,500.00, and the date for completion is May 8, 1967. No progress payments due through June 30, 1966.

Contract WD-1217 - For resurfacing watershed roads (San Mateo Co.) The contract was awarded to Lowrie Paving Company, Inc., on May 10, 1966 at an estimated bid of $17,660.00 and will be completed on July 15, 1966 at a cost of $17,807.93.

Contract WD-1220 - For construction of 78-inch pipeline from San Antonio-Calaveras Water Filtration Plant - Alameda Creek Siphon. The contract was awarded to Hood Corporation on October 19, 1965 at an estimated bid of $822,455.00 and was completed on June 24, 1966 at a cost of $821,827.50.

Contract WD-1226 - For purification of laboratory ventilation system (San Mateo Co.). The contract was awarded to Fred A. Schmitz Plumbing and Heating on December 27, 1965 at an estimated bid of $5,623.00 and was completed on February 21, 1966 at a cost of $5,623.00.

Contract WD-1235 - For relocating portion of Crystal Springs Aqueduct, Headbox and Related Appurtenances. The contract was awarded to Underground Construction Company on December 21, 1965 at an estimated bid of $87,917.00 and was completed on June 24, 1966 at a cost of $87,080.60.

Contract WD-1204 - For Alterations to 425 Mason Street Building, San Francisco. The contract was awarded to Kenneth K. Lind on June 29, 1965 at a lump sum bid of $9,552.00 and was completed on December 7, 1965.

Contract WD-1240 - For construction of 60-inch San Antonio Pipeline and 36-inch Sunol Pump Pipeline. The contract was awarded to M.G.M. Construction Company on May 24, 1966 at an estimated bid of $1,018,651.25 and the date for completion is April 22, 1967. No progress payments due through June 30, 1966.

Informal Contracts:

Informal Contract I-158 - For sidewalk construction at Summit Reservoir. The contract was awarded to F. Ferrando and Co. on January 7, 1966 at an estimated bid price of $2,160.00. The contract was completed January 31, 1966 at a cost of $2,160.00.

LANDS, LEASES AND PERMITS

LAND TRANSACTIONS:

On June 30, 1965 there were 62,961.520 acres of land owned by the Department. There were 0.000 acres purchased and 0.928 acres sold during this fiscal year, leaving 62,960.592 acres owned by the Department on June 30, 1966.

Detailed purchases and sales are:

	PURCHASES (Acres)	SALES (Acres)
PURCHASES:		
None	0.000	
SALES:		
Mayhew Tract-Pavcel 4		0.928
	0.000	0.928
Net Decrease in Acres		0.928

LEASED ACREAGE:

Out of the 62,961 acres under the jurisdiction of the Water Department about 37,500 acres are under lease or revenue producing permits.

During the fiscal year 93 revocable permits were prepared and 29 were cancelled. Twenty-five leases were prepared.

CATTLE LEASES:

There were 36 grazing leases and 28 grazing revocable permits covering 31,900 acres in effect at the end of the fiscal year. These leases run an average of five years, generally commencing on November 1. The Department continued in the land management policy of improving grazing lands through the lessees participation in County Conservation programs. This program includes improved fencing and roads, the development of small impounding dams, reseeding and weed and rodent control. A total of 42 water collecting ponds, from 15,000 gallons to 3,000,000 gallons capacity, have been developed by lessees.

Rentals from the Department's grazing lands run from $ 4.00 to $ 7.50 per acre, depending on the amount of available feed.

SHARE CROP AND FARMING LEASES:

The principal activity in this field is the raising of oats, barley and wheat hay, and barley and oat grain, of which the City receives a fourth share under that type of lease, yielding $15 to $25 per acre to the City, depending on seasonal and weather conditions.

A large acreage is devoted to specialty crops such as vegetables and flower crops which yield from $65 to $85 per acre to the City.

Strawberry acreage yields a rental of $100 to $150 per acre.

Alfalfa lands yield four to five cuttings of hay per season. The rental is one-fourth share of the crop.

ROYALTIES AND PERCENTAGE LEASES:

The Santa Clara Sand and Gravel Company's lease on 50 acres in the Sunol Valley produced a revenue for the City of $82,000 plus the purchase of approximately $20,000 for water. An additional 65 acres were added to the original lease, totalling 115 acres.

The income from the Crystal Springs Golf Course, on a percentage basis, was $ 26,000, as compared with $27,000 for the previous year.

COMMERCIAL LEASES AND PERMITS:

There are now over 125 commercial leases and revenue producing permits covering parking lots, radio station, nursery, research laboratory, mortuary, golf courses, restaurant and other types of commercial enterprises. In addition to the above, there are over 450 non-revenue revocable permits in effect. These are for non-commercial use of the land or where use of the land is of a limited commercial value and the City charges a $50 fee to cover costs of issuing the permit. The lessee must obtain all local permits and sufficient Public Liability and Property Damage insurance to protect the City as an additional insured.

There are now 32 permits or leases bringing in an annual revenue of $45,000 from the former Municipal Railway right of way in San Mateo County. These lessees use the property for parking and other types of use in connection with adjacent private commercial enterprises.

Niles Canyon in Alameda County is used for small picnic grounds under 12 permits. These rentals now pay approximately $11,000 per year, which is $7,800 more than received from this property six years ago.

WALNUT ORCHARD:

The Department's 200-acre walnut orchard was leased to Bankhead & Sons. The principal varieties grown are the Franquette, Mayette, Hartley and Payne. The quality of the nuts remains among the highest of those delivered to the Walnut Growers Association.

GENERAL:

The preparation of legal descriptions of real property and accompanying maps showing the boundaries and location of property to be leased, disposed of or acquired, totaled some 75 parcels this year. Revocable permits with appropriate terms and conditions, with accompanying maps, totaling 116 were prepared. There were 36 court actions in connection with condemnations and quieting of title actions for which 5 exhibits and the supporting data were prepared. All of this work mentioned above is done in the Engineering Division where extensive records of the Department's real property are maintained.

The majority of survey work performed this year was related to the 1961 Bond Fund Program projects. This work included preliminary and construction surveys on Bay Division pipeline No. 4, Section "A" preliminary surveys for the San Antonio and Sunol Pumping Stations, construction surveys for the Sunol Valley Treatment Plant and the 78-inch Pipeline from the Sunol Valley Treatment Plant to the Alameda Creek Siphon, preliminary surveys for the construction of the 60-inch San Antonio Pipeline and the 36-inch Sunol Pump Pipeline and the 60-inch Pipeline to replace the Crystal Springs-San Andreas Aqueduct. Preliminary Work was also performed for the Crystal Springs Bypass Tunnel and various levels and location surveys for locating core drilling holes in preparation for the construction of the Crystal Springs Bypass Tunnel. Surveys were also completed for necessary property acquisition and easements on tunnel right of way.

Other surveys were related to the reconstruction of the Crystal Springs Golf Course, monumenting Bay Division Pipeline right of way, Section "B" preliminary exploration for Bay Division Pipeline No. 4, Section "C" rehabilitation portions of the Sunol Water Distribution system, resurfacing roads from San Andreas Dam to Davis Tunnel Cottage and the road to the cottage at north San Andreas, relocating headbox and replacing portion of the Crystal Springs - San Andreas aqueduct with 60-inch pipeline.

One survey party observed piezometer readings and settlement and movement devices at James H. Turner Dam, Calaveras Dam, Pilarcitos Dam and San Andreas Dam periodically. These instrumentation readings are in conformity to State Safety of Dams regulations and are compiled by the City and sent to the State at required intervals.

SAN FRANCISCO WATER DEPARTMENT
FISCAL YEAR 1965-66

SOURCE OF GROSS INCOME

		%
SALE OF WATER:		
San Francisco		
Residential	$ 4,917,031	22.4
Commercial	4,320,011	19.7
Industrial	567,058	2.6
Muni. - Non-Pay	1,019,386	4.7
Other	192,516	0.9
TOTAL SAN FRANCISCO	$11,016,002	50.3
Suburban		
Revenue Sales	8,162,341	37.3
Muni Non-Pay	206,037	0.9
TOTAL SUBURBAN	$ 8,368,378	38.2
TOTAL SALES OF WATER	19,384,380	88.5
MISCELLANEOUS INCOME	797,280	3.6
TOTAL REVENUE	20,181,660	92.1
TRANSFERRED FROM SURPLUS	1,739,073	7.9
TOTAL	$21,920,733	100.0

Disposition of Gross Income

		%
Purchase of Water	$ 5,800,000	26.4
Municipal - Non-Paying	1,225,423	5.6
Taxes Actual	1,002,177	4.6
Bond Interest	607,481	2.8
Bond Redemption	2,098,090	9.6
Additions & Betterments	660,625	3.0
Reconstruction & Replacements	2,340,800	10.7
Balance of Operation & Maintenance	8,186,137	37.3
TOTAL	$21,920,733	100.0

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained strictly in accordance with the requirements of the California State Public Utilities Commission and Section 64 of the City Charter. The accounts of the Department have been so coordinated with the Controller's system that no encumbrance or expenditure against budget estimates can be incurred without prior certification from the Controller that funds are available. As provided in Ordinance 9.0621, an annual audit of the Department is made as of June 30 by a firm of certified public accountants.

Operating Expenses show a net increase of $2,070,381.04, as shown by the following tabulation. The largest component of which was an increase of $1,300,000.00 transferred to Hetch Hetchy Project.

OPERATING REVENUE DEDUCTIONS	Increase	Decrease
Source of Supply	$ 86,634.38	$
Pumping Expenses		22,698.78
Purification Expenses	50,199.99	
Transmission and Distributions Expenses	273,098.73	
Customers Accounts Expenses		48,328.06
Administrative and General	166,060.31	
*Municipal Taxes, Comparison	57,923.40	
Miscellaneous Expenses		4,693.27
Taxes Actual		42,359.85
Provision for Depreciation	254,544.19	
Standby Charge and Purchase of Water	1,300,000.00	
Net Decrease		2,070,381.04
	$ 2,188,461.00	$ 2,188,461.00

*Water delivered to Municipal Departments offset by taxes.

An analysis of Revenue and Operating Expenses is shown in the following Exhibits "A" through "E".

SAN FRANCISCO WATER DEPARTMENT
COMPARISON OF BUDGETED AND ACTUAL EXPENDITURES (INCLUDING ENCUMBRANCES)
FISCAL YEAR 1965-66

DESCRIPTION	BUDGET	ACTUAL	-UNDER OVER
Permanent Salaries	$ 2,779,234	$ 2,435,490	$ - 343,744
Allowance for Overtime	29,092	25,763	- 3,329
Allowance for Holidays	14,703	14,628	- 75
Extended Work Week	50,031	45,066	- 4,965
Temporary Salaries	82,180	56,942	- 25,238
Wages	2,827,564	2,780,147	- 47,417
Wages - Gardeners	135,759	125,861	- 9,898
SUB-TOTAL - PERSONAL SERVICES	5,918,563	5,483,897	- 434,666
Contractual Services	426,138	448,890	22,752
Maint. & Repair Auto. Equip.	128,230	123,118	- 5,112
Heat, Light & Power	346,300	312,085	- 34,215
Subsistence & Care of Persons	800	446	- 354
Bond Sale Expense	10,000		- 10,000
Materials & Supplies	577,645	626,567	48,922
Compensation Insurance	22,571	42,420	19,849
Judgements & Claims	20,000	46,302	26,302
Fidelity Insurance	1,175	902	- 273
Automobile Insurance	16,960	13,158	- 3,802
Fire Insurance	2,310	2,310	
Other Insurance	12,000	10,221	- 1,779
Commissions for Collections	19,800	18,484	- 1,316
Assessments & Contributions	25,000	18,661	- 6,339
Membership Dues	570	525	- 45
Fees, Licenses & Permits	8,900	7,338	- 1,562
Retirement Allowance	287,517	299,382	11,865
Social Security	103,752	117,060	13,308
Health Service System	60,804	58,577	- 2,227
Taxes	1,075,000	1,002,177	- 72,823
Rents	4,510	1,428	- 3,082
Service of Other Departments	152,258	156,511	4,253
Electronic Data Processing	320,000	224,867	- 95,133
TOTAL OPERATING BUDGET	9,540,803	9,015,326	- 525,477
Equipment	146,130	172,988	26,858
Additions & Betterments	660,625	660,625	
Reconstruction & Replacement	2,340,800	2,340,800	
Bond Interest & Redemption	3,506,289	2,705,571	- 800,718
TOTAL BUDGET	$ 16,194,647	$ 14,895,310	$ -1,299,337

SAN FRANCISCO WATER DEPARTMENT
SUMMARY OF RECEIPTS AND EXPENDITURES
FISCAL YEAR 1965-66

RECEIPTS

REVENUES	BUDGET	ACTUAL	-UNDER, OVER
Revenue from Sale of Water	$17,807,000	$18,302,777	$495,777
New Installations	200,000	168,714	- 31,286
Rents, including Commissions	450,000	437,461	- 12,539
Interest	100,000	130,158	30,158
Sale of Walnuts and Other Crops	30,000	25,439	- 4,561
Miscellaneous Revenue	30,000	35,508	5,508
TOTAL GROSS REVENUE	$18,617,000	$19,100,057	$483,057
RECEIPTS BY TRANSFER			
1961 Water Bond Fund	722,873	722,873	- - -
From Surplus Prior Years	3,000,000	3,000,000	- - -
TOTAL RECEIPTS	$22,339,873	$22,822,930	$483,057
LESS			
Allocation of Revenue to Hetch Hetchy Project	5,800,000	5,800,000	- - -
Unappropriated Revenue	87,433	87,433	- - -
TOTAL BUDGET	$16,452,440	$16,935,497	$483,057

EXHIBIT A

SAN FRANCISCO WATER DEPARTMENT

BALANCE SHEET
JUNE 30, 1966

ASSETS AND OTHER DEBITS

UTILITY PLANT			
Water Plant in Service		$142,824,974.16	
Less: Reserve for Depreciation		46,566,499.37	$ 96,258,474.79
Construction Work in Progress			11,280,788.88
TOTAL UTILITY PLANT			107,539,263.67
CURRENT AND ACCRUED ASSETS			
Cash		13,104,228.60	
Accounts Receivable	$1,616,089.22		
Less: Reserve for Uncollectible Accounts	12,000.00	1,604,089.22	
Notes Receivable		1,457.81	
Interfund Accounts Receivable -		916,570.63	
Materials and Supplies		686,337.64	
Pre-Payments		5,477.02	
TOTAL CURRENT AND ACCRUED ASSETS			16,318,160.92
DEFERRED DEBITS			
Work in Progress		$ 49,781.03	
Suspense Debits		1,427,633.48	
Other Deferred Debits		145.28	
Encumbrances (Contra)		6,025,901.95	
TOTAL DEFERRED DEBITS			7,503,461.74
TOTAL ASSETS AND OTHER DEBITS			$131,360,886.33

LIABILITIES AND OTHER CREDITS

LONG-TERM DEBT			
Bonds			$ 28,719,214.00
CURRENT & ACCRUED LIABILITIES			
Accounts Payable		$2,406,261.16	
Interfund Accounts Payable		510,825.49	
Matured Long-Term Debt		5,000.00	
Matured Interest		4,387.50	
Customer's Deposits		52,902.51	
Interest Accrued		112,500.00	
TOTAL CURRENT & ACCRUED LIABILITIES			3,091,876.66
DEFERRED CREDITS			
Suspense Credits		131,724.48	
Advances for Construction		187,570.22	
Orders for Work - Cash Advances		80,350.15	
Orders for Work - Other Departments		42,488.43	
Orders for Work - Stock Manufacture		12,060.96	
Rental Deposits & Payments made in advance		7,175.00	
Orders for Work - Accounts Receivable		641,311.79	
TOTAL DEFERRED CREDITS			1,102,681.03
RESERVE			
Reserve for Encumbrances		6,025,901.95	
Injuries and Damages Reserve		75,000.00	
Reserve for Refunds		152,223.31	
Funded -	$59,509.43		
Unfunded -	92,713.88		
Reserve for Contractor's Damage Claims		29,110.08	
Reserve for Unpaid Revolving Fund Checks		2,597.47	
TOTAL RESERVES			6,284,832.81
SURPLUS			
Earned Surplus			92,162,281.83
TOTAL LIABILITIES AND OTHER CREDITS			$131,360,886.33

EXHIBIT B

SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT

TWELVE MONTHS ENDING JUNE 30, 1966

TITLE		FISCAL YEAR 1965 - 1966	FISCAL YEAR 1964 - 1965	1965 - 1966 INCREASE (DECREASE)	MARCH. 3, 1930 TO JUNE 30, 1966
OPERATING INCOME					
Sale of Water		$19,384,379.75	$18,568,522.13	$ 815,857.62	$406,720,758.91
OPERATING REVENUE DEDUCTIONS					
Operating Expenses		8,171,933.15	7,613,736.45	558,196.70	126,000,600.91
Purchase of Water		5,800,000.00	4,500,000.00	1,300,000.00	86,846,061.92
Depreciation		1,918,386.59	1,663,842.40	254,544.19	41,669,880.70
Taxes - Actual		1,002,177.14	1,044,536.99	(42,359.85)	18,678,988.21
	TOTAL OPERATING REVENUE DEDUCTIONS	16,892,496.88	14,822,115.84	2,070,381.04	273,195,531.74
	UTILITY OPERATING INCOME	2,491,882.87	3,746,406.29	(1,256,969.42)	133,525,227.17
OTHER INCOME		1,105,314.47	1,086,750.07	18,564.40	15,522,793.04
	GROSS INCOME	3,597,197.34	4,833,156.36	(1,238,405.02)	149,048,020.21
INCOME DEDUCTIONS		676,196.84	385,466.89	290,729.95	45,801,652.74
	NET INCOME TRANSFERRED TO EARNED SURPLUS	$ 2,921,000.50	$ 4,447,689.47	$1,529,134.97	$103,246,367.47

Rents - Including Share Crops	$444,511.63
Collections from Damage Claims	10,594.93
Interest Revenue	130,158.40
Walnut Orchard	23,016.96
House Rent	5,650.00
Fixed Asset Sales	47,475.46
Miscellaneous	443,907.09
	$1,105,314.47

Non-Operating Revenue Deductions	$ 68,714.98
Interest on Long-Term Debt	607,481.86
	$676,196.84

EXHIBIT C

SAN FRANCISCO WATER DEPARTMENT

SURPLUS

JUNE 30, 1966

SURPLUS - JUNE 30, 1965	$89,262,489.08
ADD:	
Net Income for Twelve Months ending June 30, 1966	2,921,000.50
DEDUCT:	
Adjustment of June 30, 1965 Surplus	21,207.75
SURPLUS - JUNE 30, 1966	$92,162,281.83

COMPOSITION OF SURPLUS - CONDENSED

JUNE 30, 1966

INITIAL SURPLUS - MARCH 3, 1930		$ 4,152,652.24		
Amortization on Contribution (Spring Valley)		100,000.00		
Valuation of Municipal Water Works		4,252,652.24		
LESS: Additional Allowance for Depreciation - March 1, 1920 to March 3, 1930		2,327,916.67	$ 1,924,735.57	
ADDITIONS:				
Net Income - March 3, 1930 to June 30, 1966		103,246,367.47		
Miscellaneous and Year to Year Adjustments		5,190,617.05		
Contributions from Hetch Hetchy Power Division		409,471.41		
Contributions from 1947 Hetch Hetchy Water Bond Fund		290,516.71	109,136,972.64	
Grants Earned on Federal Public Works Project			2,358,987.60	
Year to Year - Addition to Surplus - June 30, 1966			1,669,481.49	$115,090,177.30
DEDUCTIONS:				
Contributed to General Fund			15,992,457.24	
Contributed to Hetch Hetchy Water Supply			4,466,014.40	
Lands contributed to City and County of San Francisco for Streets and Boulevards			172,564.67	
Excess of adjusted book value of plant appraisal, December 31, 1937	$1,990,474.91			
Excess of adjusted book value of plant appraisal, June 30, 1953	188,291.42	2,178,766.33		
LESS: Adjusted book value of plant appraisal, June 30, 1948		83,864.03		
ADD: Adjusted book value of plant appraisal, June 30, 1963		89,383.93		
" " " " " June 30, 1958		91,365.18		
Adjustment of June 30, 1965 Surplus		21,207.75	2,296,859.16	22,927,895.47
SURPLUS - JUNE 30, 1966				$ 92,162,281.83

EXHIBIT E

SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT

JUNE 30, 1966

TITLE	FISCAL YEAR 1965 - 1966	FISCAL YEAR 1964 - 1965	1965 - 1966 INCREASE - (DECREASE)	MARCH 3, 1930 to JUNE 30, 1966
OPERATING INCOME				
Sale of Water				
Water Sales - San Francisco	$ 9,876,329.33	$ 9,827,594.79	$ 48,734.54	
" " - Outside San Francisco	8,194,924.89	7,485,871.27	709,053.62	
" " - Municipal Departments - Actual	87,702.02	87,555.96	146.06	
" " - " " - Comparison	1,225,423.51	1,167,500.11	57,923.40	
TOTAL WATER SALES	$19,384,379.75	$18,568,522.13	$815,857.62	$406,720,758.91
OPERATING REVENUE DEDUCTIONS				
Source of Supply				
Operation, Supervision, and Engineering	$ 65,723.32	$ 68,149.20	$ (2,425.88)	
Operation, Labor, and Expense	568,913.98	445,753.46	123,160.52	
Miscellaneous Expenses	1,452.37	1,230.46	221.91	
Maintenance, Supervision, and Engineering	9,774.36	3,575.46	6,198.90	
" of Structures and Improvements	236,706.94	217,854.70	18,852.24	
" " Collecting and Impounding Reservoirs	100,425.19	138,481.14	(38,055.95)	
" " Lake, River, and Other Intakes	406.85	-0-	406.85	
" " Springs and Tunnels	446.25		446.25	
" " Wells	527.28	953.29	(426.01)	
" " Supply Mains	72,752.62	102,468.71	(29,716.09)	
" " Other Source of Supply Plant	13,904.92	5,933.28	7,971.64	
TOTAL SOURCE OF SUPPLY EXPENSES	$ 1,071,034.08	$ 984,399.70	$ 86,634.38	$ 15,070,971.33
Pumping Expenses				
Pumping Labor and Expenses	$ 91,531.35	$ 93,603.74	$ (2,072.39)	
Miscellaneous Supplies and Expense	1,041.52	750.29	291.23	
Fuel or Power Purchased for Pumping	261,828.30	272,052.10	(10,223.80)	
Maintenance, Supervision, and Engineering	-0-	-0-	-0-	
" of Structures and Improvements	8,241.01	22,322.00	(14,080.99)	
" " Primary Pumping Equipment	3,813.67	345.07	3,468.60	
" " Pumping Equipment	26,552.92	23,039.79	3,513.13	
Gardening	1,797.18	5,391.74	(3,594.56)	
TOTAL PUMPING EXPENSES	$ 394,805.95	$ 417,504.73	$(22,698.78)	$ 11,286,332.33
Purification Expense Accounts				
Operation, Supervision, and Engineering	$ 70,847.55	$ 59,962.27	$ 10,885.28	
" Labor, and Expenses	192,205.23	160,504.25	31,700.98	
Miscellaneous Expenses	129.95	56.07	73.88	
Supplies and Expenses	220,480.92	213,370.23	7,110.69	
Maintenance, Supervision, and Engineering	1,287.94		1,287.94	
" of Structures and Improvements	6,163.00	5,278.87	884.13	
" " Water Treatment Equipment	1,215.39	2,958.30	(1,742.91)	
TOTAL PURIFICATION EXPENSES	$ 492,329.98	$ 442,129.99	$ 50,199.99	$ 5,451,640.03

EXHIBIT E (Cont'd.)

SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT

JUNE 30, 1966

TITLE	FISCAL YEAR 1965 - 1966	FISCAL YEAR 1964 - 1965	1965 - 1966 INCREASE - (DECREASE)	MARCH 3, 1930 to JUNE 30, 1966
OPERATING REVENUE DEDUCTIONS (Cont'd.)				
Transmission and Distribution Accounts				
Operation, Supervision, and Engineering	$ 167,425.32	$ 151,329.19	$ 16,096.13	
Storage Facilities Expenses	14,474.97	9,201.83	5,273.14	
Transmission and Distribution Lines Expenses	229,201.37	198,036.06	31,165.31	
Meter Expenses	245,360.12	241,213.91	4,146.21	
Customer Installations Expenses	315,223.44	294,899.55	20,323.89	
Miscellaneous	11,786.72	4,902.08	6,884.64	
Operating Expenses - City Yard	190,589.42	154,748.58	35,840.84	
Maintenance, Supervision, and Engineering	4,771.49	4,631.20	140.29	
" of Structures and Improvements	84,352.99	101,801.43	(17,448.44)	
" " Reservoirs and Tanks	19,273.28	61,024.80	(41,751.52)	
" " Transmission Lines and Canals	56,075.25	50,822.64	5,252.61	
" " Services	542,699.45	527,621.35	15,078.10	
" " Miscellaneous Plant	26,139.58	25,205.86	933.72	
" " Distribution Mains, Canals, etc.	651,880.75	460,689.22	191,191.53	
Reconditioning of Salvage Materials		27.72	(27.72)	
TOTAL TRANSMISSION AND DISTRIBUTION ACCOUNTS	$ 2,559,254.15	$ 2,286,155.42	$ $273,098.73	$30,133,079.05
Customers' Accounts Expenses				
Meter Reading Expenses	$ 109,978.65	$ 106,178.53	$ 3,800.12	
Customer Records and Collection Expenses	147,413.16	159,934.27	(12,521.11)	
Miscellaneous Customer Accounts Expenses	163,123.11	153,531.89	9,591.22	
Inspection and Service	132,992.69	122,128.06	10,864.63	
Bookkeeping Department	198,427.19	258,453.41	(60,026.22)	
Shipping	29,071.32	29,108.02	(36.70)	
TOTAL CUSTOMERS' ACCOUNTS EXPENSES	$ 781,006.12	$ 829,334.18	$ (48,328.06)	$18,905,173.72
Administrative and General				
Salaries - General Officers	$ 33,285.02	$ 14,531.97	$ 18,753.05	
" - " Office	127,752.10	131,349.04	(3,596.94)	
General Engineering	220,684.42	231,141.84	(10,457.42)	
Resources and Planning	34,546.79	33,330.87	1,215.92	
Office Supplies and Other Expenses	36,355.34	63,590.23	(27,234.89)	
Telephone Service	55,662.78	60,037.05	(4,374.27)	
Mason Street Operating Expense	132,318.67	69,004.46	63,314.21	
Municipal Taxes - Comparison	1,225,423.51	1,167,500.11	57,923.40	
Outside Services Employed	-0-	-0-	-0-	
Insurance - Compensation	116,037.58	85,500.11	30,537.47	
" - Other	10,372.88	13,593.03	(3,220.15)	
Injuries and Damages	40,208.47	19,960.17	20,248.30	
Pensions	191,956.30	180,620.37	11,335.93	
Social Security	117,060.50	88,525.88	28,534.62	
Electronic Data Program	173,739.19	279,371.04	(105,631.85)	
Public Utilities Commission	129,813.18	119,426.51	10,386.67	
Hydrography	1,350.00	2,600.00	(1,250.00)	
Maintenance to Telephone System	39,272.46	32,163.12	7,109.34	
" " Mason Street Building	8,801.39	5,854.43	2,946.96	
" " Radio System	3,363.60	2,335.22	1,028.38	
Inventory Expense - Maintenance	(12,348.13)	(12,095.47)	(252.66)	
Maintenance of Non-Operative Property	2,468.97	18.00	2,450.97	
Miscellaneous Maintenance	158,390.73	34,174.06	124,216.67	
TOTAL ADMINISTRATIVE AND GENERAL	$ 2,846,515.75	$ 2,622,532.04	$ 223,983.71	$44,160,752.28

EXHIBIT E (Cont'd.)

SAN FRANCISCO WATER DEPARTMENT

COMPARATIVE INCOME STATEMENT

JUNE 30, 1966

TITLE	FISCAL YEAR 1965 - 1966	FISCAL YEAR 1964 - 1965	1965 - 1966 INCREASE - (DECREASE)	MARCH 3, 1930 to JUNE 30, 1966
OPERATING REVENUE DEDUCTIONS (Cont'd.)				
Miscellaneous Expenses				
Uncollectible Water Bills	$ 16,564.47	$ 18,166.94	$(1,602.47)	
Provision for Contingent Refunds	10,422.65	13,513.45	(3,090.80)	
Other Operating Expenses - Fixed Charges	-0-	-0-	-0-	
Undistributed Operating Expenses	-0-	-0-	-0-	
TOTAL MISCELLANEOUS EXPENSES	$ 26,987.12	$ 31,680.39	$(4,693.27)	$ 992,652.17
TOTAL OPERATING REVENUE DEDUCTIONS	$8,171,933.15	$7,613,736.45	$558,196.70	$126,000,600.91
OPERATING EXPENSES				
Purchase of Water	$5,800,000.00	$4,500,000.00	$1,300,000.00	
Depreciation	1,918,386.59	1,663,842.40	254,544.19	
Taxes - Actual	1,002,177.14	1,044,536.99	(42,359.85)	
TOTAL OPERATING EXPENSES	$8,720,563.73	$7,208,379.39	$1,512,184.34	$147,194,930.83
UTILITY OPERATING INCOME	$2,491,882.87	$3,746,406.29	$(1,254,523.42)	$133,525,227.17
OTHER INCOME				
Rentals, including Crop Shares	$ 444,511.63	$ 433,391.15	$ 11,120.48	
Walnut Orchard Sales	23,016.96	25,000.00	(1,983.04)	
Miscellaneous	460,152.02	313,395.48	146,756.54	
Interest Earned	130,158.40	114,471.77	15,686.63	
Sales of Real Estate and Fixed Assets	47,475.46	200,491.67	(153,016.21)	
TOTAL OTHER INCOME	$1,105,314.47	$1,086,750.07	$ 18,564.40	$ 15,522,793.04
GROSS INCOME	$3,597,197.34	$4,833,156.36	$(1,235,959.02)	$149,048,020.21
INCOME DEDUCTIONS				
Agricultural Division	$ 32,105.97	$ 35,542.81	$ (3,436.84)	
Walnut Orchard Expense	8,927.41	8,818.88	108.53	
Miscellaneous Expense	27,681.60	29,134.28	(1,452.68)	
Interest on Long-Term Debt	607,481.86	311,970.92	295,510.94	
TOTAL INCOME DEDUCTIONS	$ 676,196.84	$ 385,466.89	$ 290,729.95	$ 45,801,652.74
NET INCOME TRANSFERRED TO SURPLUS	$2,921,000.50	$4,447,689.47	$(1,526,688.97)	$103,246,367.47

BOND REDEMPTION AND INTEREST

WATER DEPARTMENT

	Redemption				Interest				Total Redemption plus Interest
	Spring Valley 1928	H.H. Water Service 1947	Muni Water System 1961	Total	Spring Valley 1928	H.H. Water Service 1947	Muni Water System 1961	Total	
1965-66	$1,000,000	$ 225,328	$ 982,474	$ 2,207,802	$225,000	$23,676	$ 1,138,784	$ 1,387,460	$ 3,595,262
1966-67	1,000,000	132,682	798,840	1,931,522	180,000	15,175	909,440	1,104,615	3,036,137
1967-68	1,000,000	132,682	1,546,253	2,678,935	135,000	7,994	1,111,623	1,254,617	3,933,552
1968-69	1,000,000	91,882	1,546,253	2,638,135	90,000	814	1,060,538	1,151,352	3,789,487
1969-70	1,000,000		1,546,253	2,546,253	45,000		1,010,053	1,055,053	3,601,306
1970-71			1,594,251	1,594,251			960,079	960,079	2,554,330
1971-72			1,755,393	1,755,393			907,845	907,845	2,663,238
1972-73			2,098,242	2,098,242			841,701	841,701	2,939,943
1973-74			2,098,244	2,098,244			766,373	766,373	2,864,617
1974-75			2,098,241	2,098,241			690,586	690,586	2,788,827
1975-76			2,098,242	2,098,242			614,687	614,687	2,712,929
1976-77			2,101,669	2,101,669			544,129	544,129	2,645,798
1977-78			2,101,670	2,101,670			477,299	477,299	2,578,969
1978-79			2,098,241	2,098,241			410,468	410,468	2,508,709
1979-80			2,098,242	2,098,242			343,741	343,741	2,441,983
1980-81			2,098,241	2,098,241			277,015	277,015	2,375,256
1981-82			2,098,243	2,098,243			210,287	210,287	2,308,530
1982-83			1,858,247	1,858,247			143,560	143,560	2,001,807
1983-84			966,837	966,837			84,084	84,084	1,050,921
1984-85			966,838	966,838			50,257	50,257	1,017,095
1985-86			881,125	881,125			17,717	17,717	898,842
1986-87			599,988	599,988			750	750	600,738
TOTAL DUE AFTER 6-30-65	$5,000,000	$582,574	$36,032,027	$41,614,601	$675,000	$47,659	$12,571,016	$13,293,675	$54,908,276

ORIGINAL AMOUNTS AND INTEREST RATES

	Spring Valley 1928	H.H. Water Service 1947	Muni Water System 1961	Total	Spring Valley 1928	H.H. Water Service 1947	Muni Water System 1961
	$41,000,000	$12,500,000	$36,712,376	$89,212,376	4½%	1¼ to 6%	2¼ to 6%

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APPENDIX TO
REPORT OF SAN FRANCISCO WATER DEPARTMENT

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TABLE NO. 1
METERS - NUMBER AND SIZE IN SERVICE
SAN FRANCISCO DISTRICT AS OF JUNE 30, 1966

CLASS OF CONSUMERS:	5/8"	3/4"	1"	1$\frac{1}{2}$"	2"	3"	4"	6"	8"	10"	12"	TOTAL
Revenue Producing												
Commercial	16,894	1,486	3,531	3,067	5,166	79	330	516	422	1	3	31,495
Residential	119,279	5,842	1,859	300	21	-	-	-	-	-	-	127,301
Docks & Ship.	133	12	32	52	131	-	2	3	6	-	2	373
TOTAL	136,306	7,340	5,422	3,419	5,318	79	332	519	428	1	5	159,169
Non-Revenue Producing												
Commercial	1,216	26	99	55	57	7	11	18	14	-	-	1,503
Residential	1,385	45	12	-	-	-	-	-	-	-	-	1,442
Docks & Ship.	6	-	-	1	-	-	-	-	-	-	-	7
TOTAL	2,607	71	111	56	57	7	11	18	14	-	-	2,952
TOTALS:												
Commercial	18,110	1,512	3,630	3,122	5,223	86	341	534	436	1	3	32,998
Residential	120,664	5,887	1,871	300	21	-	-	-	-	-	-	128,743
Docks & Ship.	139	12	32	53	131	-	2	3	6	-	2	380
TOTAL	138,913	7,411	5,533	3,475	5,375	86	343	537	442	1	5	162,121

Total meters in service as of June 30, 1966			162,121
Less:	Extra meters in 1,213 Batteries - (3,532 meters - 1,213)	2,319	
	Extra meters in 23 Consolidations (66 meters - 23)	43	
	Non-Revenue meters (temporarily shut off)	2,952	5,314
	Number of Active Accounts as of June 30, 1966		156,807

NOTE: The above meter count includes 1,530 Fire Services. At dock and Shipping Office, portable meters used on hydrants as needed (not included above) 25 - 1$\frac{1}{2}$" & 29 - 2" meters At Union Plant of Bethlehem Shipbuilding Corp. 8 - 1$\frac{1}{2}$" meters.

PREVIOUS RECORDS	1961-62	1962-63	1963-64	1964-65	1965-66
Total Meters	159,812	160,317	160,821	161,286	162,121
Increase	735	505	504	465	835
Idle Meters	2,303	2,283	2,126	2,742	2,952

TABLE 2
METERS - NUMBER AND SIZE IN SERVICE
SUBURBAN DISTRICT AS OF JUNE 30, 1966

CLASS OF CONSUMERS:	5/8"	3/4"	1"	1½"	2"	4"	6"	8"	10"	12"	16"	TOTAL
Revenue Producing												
Regular Rates	410	37	34	22	148	20	79	79	16	3	5	853
Airport Use	11	7	15	14	29	2	3	13	1	1	-	96
TOTAL	421	44	49	36	177	22	82	92	17	4	5	949
Non-Revenue Producing												
Regular Rates	6	-	-	1	-	-	-	-	-	-	-	6
Airport Use	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	6	-	-	1	-	-	-	-	-	-	-	6
TOTALS												
Regular Rates	415	37	34	23	148	20	79	79	16	3	5	859
Airport Use	11	7	15	14	29	2	3	13	1	1	-	96
TOTAL	426	44	49	37	177	22	82	92	17	4	5	955

Total:	Meters in service as of June 30, 1966		955
Less:	Extra meters in 82 Batteries and Consolidations - (362 meters - 82)	280	
	Non-Revenue meters (temporarily shut off)	6	286
	Number of Active Suburban Accounts as of June 30, 1966		669

NOTE: The above meter count includes 13 Automatic Sprinklers for fire purposes

PREVIOUS RECORDS:	1961-62	1962-63	1963-64	1964-65	1965-66
Total Meters	992	963	938	951	955
Increase; Decrease-	21	-29	-25	13	4
Idle Meters	8	13	7	10	6

TABLE NO. 3

STREET MAIN TAPS AND SERVICE CONNECTIONS RECORD

San Francisco District June 30, 1966

TAPS ON STREET MAINS

	Wharf	3/4"	1"	$1\frac{1}{2}$"	2"	3"	4"	6"	8"	10"	12"	16"	TOTALS
June 30, 1965	375	156,617	19,081	5,270	3,620	1,081	784	694	473	1	19	2	188,017
Add 1965-66	-	-2,189	3,017	145	120	54	43	29	14	-	1	-	1,234
June 30, 1966	375	154,428	22,098	5,415	3,740	1,135	827	723	487	1	20	2	189,251

SERVICE CONNECTIONS

ADD Services connected to street mains, as above.	189,251
"Distributors", being 1 or more additional meter conn. to service pipes	4,853
TOTAL connections of record	194,104
Disconnected services	34,345
Net metered live services consisting of 159,169 active meters; less 2,362 extra meters in batteries, plus 2,952 services temporarily shut off	159,759

Previous Records:	1962-63	1963-64	1964-65
Active	158,034	158,695	158,544
Shut off	2,283	2,126	2,742
TOTALS	160,317	160,821	161,286
Less extra battery meters	2,156	2,170	2,257
NET	158,161	158,651	159,029

SERVICE INSTALLATIONS ORDERED

Fiscal Year 1965-66

DISTRICT:	Taps	Distributors	TOTALS
Richmond District	64	1	65
Sunset	109	0	109
North Market & Western Add'n.	337	1	338
South Market & Twin Peaks	575	0	575
Waterfront	0	0	0
TOTALS	1,085	2	1,087

Previous Years	Taps	Distributors	TOTALS
1962-63	1,368	24	1,392
1963-64	1,189	0	1,189
1964-65	1,136	0	1,136

TABLE NO. 4

LENGTH OF VARIOUS SIZES OF TRANSMISSION MAINS IN FEET

	16"	24"	28"	30"	33"	36"	37"	39"	42"	44"	48"	54"	57"
Alameda	395s					122,934							
Pleasanton				27,432									
Niles-Irvington										15,600			
Calaveras										30,570	1,045		
Bay Div'n #1									3,161s				6,821
" " #2									250r			6,066s	
" " #3													
Alameda Cr.Siphon													
C. S. #1		238								84,943		358	
C. S. #2				669					100			16,757	
Sunset & C.S. #3													
Sunset Pipeline												337	
San Andreas Br.of Sunset Pipeline													
San Andreas #1		31				2,334			3,150	21,103			
San Andreas #2												64,722	
Baden-Merced				32,258		2,260	1,560						
San Andreas Outlet Conn. Pipes				5,024								869	
Palo Alto						28,049							
Pilarcitos Aqued.			7,480		169	648				730			
Stone Dam "				501				1,814		2,106	2,894		
C.S. - S.A. "										30	916	492	
TOTAL	395	269	7,480	65,884	169	156,225	1,560	1,814	6,661	155,082	4,855	89,601	6,821

(continued)

s - submarine pipes
r - risers

TABLE NO. 4
LENGTH OF VARIOUS SIZES OF TRANSMISSION MAINS IN FEET (Cont'd)

	60"	61"	62"	66"	69"	72"	76"	78"	79"	86"	90"	91"	Total Feet	Miles
Alameda													123,329	23.36
Pleasanton													27,432	5.19
Niles-Irvington													15,600	2.95
Calaveras													31,615	5.99
Bay Div'n #1	102,131												112,113	21.23
" " #2			26,094	78,856			3,867						115,133	21.81
" " #3						127,103		43,184			917			
						5,725*		1,908*			271*		179,108	33.92
" " #4						672				365	90,342		91,379	17.31
Alameda Cr. Siphon					2,942	93					2,972		6,007	1.14
C. S. #1	4,948												90,487	17.14
C. S. #2	84,317							716					102,559	19.42
Sunset & C. S. #3	255							145	14,491			5,192		
									120*			119*	20,322	3.85
Sunset Pipeline	45,923	37,885												
	105*	67*											84,317	15.97
San Andreas Br.of Sunset Pipeline	41	5,907												
		71*											6,019	1.14
San Andreas #1													26,618	5.04
" " #2													64,722	12.26
Baden-Merced													36,078	6.83
San Andreas Outlet Conn.Pipes	1,739	873				1,276							9,781	1.85
Palo Alto													28,049	5.31
Pilarcitos Aqued.													9,027	1.71
Stone Dam "													7,315	1.39
C.S. - S.A. "				356		820							2,614	.50
Sunol Plant to Siphon								8,512					8,512	1.61
TOTAL	239,459	44,803	26,094	79,212	2,942	135,689	3,867	54,465	14,611	365	94,502	5,311	1,198,136	226.92

*Tapers, Valves, Meters and Specials

TABLE NO. 5

PIPE RECORDS
CITY DISTRIBUTION SYSTEM

WROUGHT IRON, DUCTILE IRON AND STEEL PIPE

Size	Total Pipe in Ground June 30, 1965	Pipe Laid 1965-66	Removed or Abandoned 1965-66	Total Pipe in Ground June 30, 1966
0-3/4"	11,887	0	0	11,887
1	32,526	0	100	32,426
1-1/4	3,728	0	0	3,728
1-1/2	131,906	0	3,070	128,836
2	148,844	376	6,312	142,908
3	11,334	0	6,110	5,224
4	3,886	0	0	3,886
5	804	0	0	804
6	3,845	115	0	3,960
6-5/8 O.D.	680	0	0	680
8	130	498	0	628
8-5/8 O.D.	937	0	0	937
12	6,627	303	0	6,930
13	678	0	0	678
16	18,539	1,250	0	19,789
18-5/8 O.D.	1,829	0	0	1,829
20	74,356	1,563	0	75,919
22	25,309	0	0	25,309
23-1/2	2,037	0	0	2,037
24	57,545	0	0	57,545
30	44,227	0	0	44,227
33	2,409	0	0	2,409
36	56,596	0	0	56,596
37-1/2	8,896	0	0	8,896
44	22,040	221	0	22,261
48	12,060	0	0	12,060
60	26,216	0	0	26,216
TOTAL W.I.,D.I.&S.	709,871	4,326	15,592	698,605

TRANSITE PIPE

Size	Total Pipe in Ground June 30, 1965	Pipe Laid 1965-66	Removed or Abandoned 1965-66	Total Pipe in Ground June 30, 1966
6"	17,049	0	0	17,049
8"	24,649	0	0	24,649
TOTAL TRANSITE	41,698	0	0	41,698

TABLE NO. 5 (Cont'd.)

CAST IRON PIPE

Size	Total Pipe in Ground June 30, 1965	Pipe Laid 1965-66	Removed or Abandoned 1965-66	Total Pipe in Ground June 30, 1966
2"	26,653	0	342	26,311
3	53,418	0	700	52,718
4	500,375	6,949	1,775	505,549
6	1,994,648	15,242	2,690	2,007,200
8	1,706,215	12,735	1,939	1,717,011
10	5,046	0	0	5,046
12	575,717	1,308	1,408	575,617
16	337,321	1,451	952	337,820
20	22,592	0	0	22,592
22	19,058	0	0	19,058
24	60,256	0	0	60,256
30	4,397	0	0	4,397
TOTAL C.I.	5,305,696	37,685	9,806	5,333,575
TOTAL ALL	6,057,265	42,011	25,398	6,073,878
MILES	1,147.209	7.957	4.810	1,150.356

TABLE NO. 6

VALVE RECORDS

June 30, 1966

CITY DISTRIBUTION SYSTEM

Gates		Service Gates		Blow-Offs		Air Valves		Check Valves		Stop Cocks	
2"	117	3"	568	0-3/4"	9	0-3/4"	370	1-1/2"	7	5/8"	18
3	207	4	1,029	1	42	1	267	2	10	3/4"	134
4	1,391	6	673	1-1/2	244	1-1/2	538	3	1	1	196
6	5,021	8	442	2	926	2	352	4	13	1-1/2	901
8	4,431	12	18	3	236	3	5	6	37	2	2,365
10	5			4	683	4	0	8	28		
12	1,031			6	266	6	12	12	4		
16	527			8	135	8	302	16	2		
20	32			12	19						
22	20			16	3						
24	65										
30	23										
36	22										
37-1/2	2										
42	3										
48	1										
	12,898		2,730		2,563		1,846		102		3,614

SUBURBAN SYSTEM

GATES

3/4"	10	2"	214	8"	499	16"	57	24"	18	44"	4
1	38	4	238	10	40	18	14	30	21	48	15
1-1/4	3	5	30	12	135	20	19	36	21	54	6
1-1/2	15	6	537	14	1	22	2	42	19		

TOTAL 1,956

Butterfly Valves	Sluice Gates	Air Relief & Vacuum Valves	Check Valves	Stop Cock	Plug Valves	Globe Valves	Pressure Regulating & Relief Valves	Miscl.
8	26	1,016	225	1,694	130	16	7	28

GRAND TOTAL 5,106

ORGANIZATION AND PERSONNEL

EXECUTIVE

Arthur H. Frye, Jr.	General Manager and Chief Engineer
H. C. Medbery	Assistant General Manager and Assistant Chief Engineer

RESOURCES & PLANNING

R. D. Keeley	Senior Civil Engineer

ENGINEERING DIVISION

C. A. Lauenstein	Principal Engineer
P. T. Matsumura	Senior Civil Engineer
D. P. Cooper	Senior Civil Engineer

CITY DISTRIBUTION DIVISION

K. R. Boyd	Manager
J. E. Kenck	Assistant Manager

SHOPS DIVISION

F. Baggetta	Superintendent

PENINSULA DIVISION

J. E. O'Marie	Manager
R. L. Borame	Assistant Manager

ALAMEDA DIVISION

C. L. Hughes	Manager
G. J. Caccia	Assistant Manager

WATER PURIFICATION DIVISION

H. W. Tracy	Manager

COMMERCIAL DIVISION

J. J. Lyons	Manager
J. W. Cooper	Assistant Manager

AGRICULTURAL AND LAND DIVISION

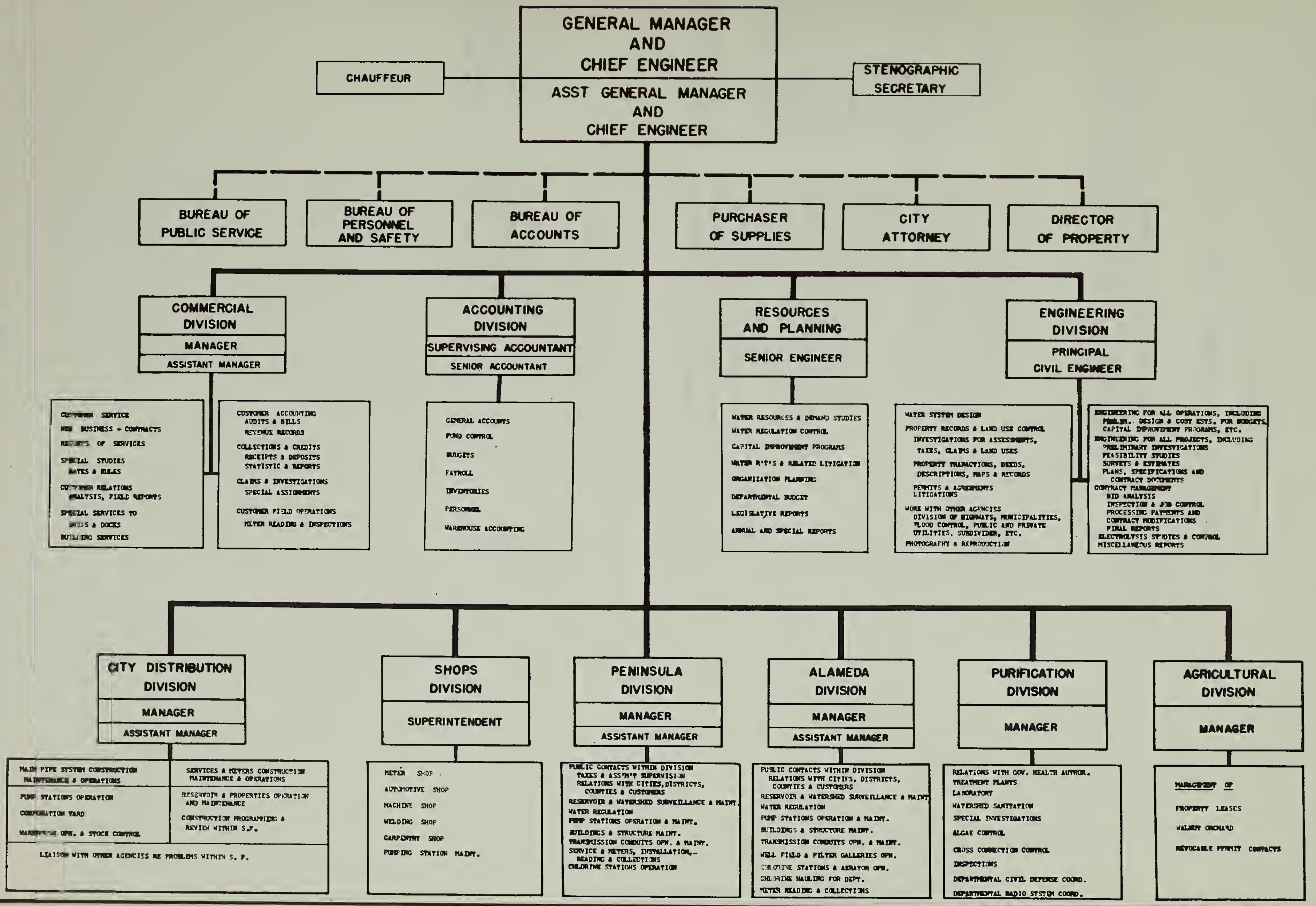
J. G. Brucato	Manager

ACCOUNTING DIVISION

W. J. Dwyer	Chief Accountant
A. A. Lenzio	Head Accountant

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION

SAN FRANCISCO WATER DEPARTMENT ORGANIZATION CHART


GENERAL MANAGER AND CHIEF ENGINEER
ASST GENERAL MANAGER AND CHIEF ENGINEER
CHAUFFEUR
STENOGRAPHIC SECRETARY
BUREAU OF PUBLIC SERVICE
BUREAU OF PERSONNEL AND SAFETY
BUREAU OF ACCOUNTS
PURCHASER OF SUPPLIES
CITY ATTORNEY
DIRECTOR OF PROPERTY
COMMERCIAL DIVISION
MANAGER
ASSISTANT MANAGER
CUSTOMER SERVICE
NEW BUSINESS - CONTRACTS
RECORDS OF SERVICES
SPECIAL STUDIES
RATES & RULES
CUSTOMER RELATIONS
ANALYSIS, FIELD REPORTS
SPECIAL SERVICES TO
SHIPS & DOCKS
BUILDING SERVICES
CUSTOMER ACCOUNTING
AUDITS & BILLS
REVENUE RECORDS
COLLECTIONS & CREDITS
RECEIPTS & DEPOSITS
STATISTIC & REPORTS
CLAIMS & INVESTIGATIONS
SPECIAL ASSIGNMENTS
CUSTOMER FIELD OPERATIONS
METER READING & INSPECTIONS
ACCOUNTING DIVISION
SUPERVISING ACCOUNTANT
SENIOR ACCOUNTANT
GENERAL ACCOUNTS
FUND CONTROL
BUDGETS
PAYROLL
INVENTORIES
PERSONNEL
WAREHOUSE ACCOUNTING
RESOURCES AND PLANNING
SENIOR ENGINEER
WATER RESOURCES & DEMAND STUDIES
WATER REGULATION CONTROL
CAPITAL IMPROVEMENT PROGRAMS
WATER R'T'S & RELATED LITIGATION
ORGANIZATION PLANNING
DEPARTMENTAL BUDGET
LEGISLATIVE REPORTS
ANNUAL AND SPECIAL REPORTS
ENGINEERING DIVISION
PRINCIPAL CIVIL ENGINEER
WATER SYSTEM DESIGN
PROPERTY RECORDS & LAND USE CONTROL
INVESTIGATIONS FOR ASSESSMENTS,
TAXES, CLAIMS & LAND USES
PROPERTY TRANSACTIONS, DEEDS,
DESCRIPTIONS, MAPS & RECORDS
PERMITS & AGREEMENTS
LITIGATIONS
WORK WITH OTHER AGENCIES
DIVISION OF HIGHWAYS, MUNICIPALITIES,
FLOOD CONTROL, PUBLIC AND PRIVATE
UTILITIES, SUBDIVIDER, ETC.
PHOTOGRAPHY & REPRODUCTION
ENGINEERING FOR ALL OPERATIONS, INCLUDING
PRELIM. DESIGN & COST ESTS. FOR BUDGETS,
CAPITAL IMPROVEMENT PROGRAMS, ETC.
ENGINEERING FOR ALL PROJECTS, INCLUDING
PRELIMINARY INVESTIGATIONS
FEASIBILITY STUDIES
SURVEYS & ESTIMATES
PLANS, SPECIFICATIONS AND
CONTRACT DOCUMENTS
CONTRACT MANAGEMENT
BID ANALYSIS
INSPECTION & JOB CONTROL
PROCESSING PAYMENTS AND
CONTRACT MODIFICATIONS
FINAL REPORTS
ELECTROLYSIS STUDIES & CONTROL
MISCELLANEOUS REPORTS
CITY DISTRIBUTION DIVISION
MANAGER
ASSISTANT MANAGER
MAIN PIPE SYSTEM CONSTRUCTION
MAINTENANCE & OPERATIONS
PUMP STATIONS OPERATION
CORPORATION YARD
WAREHOUSE OPN. & STOCK CONTROL
SERVICES & METERS CONSTRUCTION
MAINTENANCE & OPERATIONS
RESERVOIR & PROPERTIES OPERATION
AND MAINTENANCE
CONSTRUCTION PROGRAMING &
REVIEW WITHIN S.F.
LIAISON WITH OTHER AGENCIES RE PROBLEMS WITHIN S. F.
SHOPS DIVISION
SUPERINTENDENT
METER SHOP
AUTOMOTIVE SHOP
MACHINE SHOP
WELDING SHOP
CARPENTRY SHOP
PUMPING STATION MAINT.
PENINSULA DIVISION
MANAGER
ASSISTANT MANAGER
PUBLIC CONTACTS WITHIN DIVISION
TAKES & ASS'N'T SUPERVISION
RELATIONS WITH CITIES, DISTRICTS,
COUNTIES & CUSTOMERS
RESERVOIR & WATERSHED SURVEILLANCE & MAINT.
WATER REGULATION
PUMP STATIONS OPERATION & MAINT.
BUILDINGS & STRUCTURE MAINT.
TRANSMISSION CONDUITS OPN. & MAINT.
SERVICE & METERS, INSTALLATION,-
READING & COLLECTIONS
CHLORINE STATIONS OPERATION
ALAMEDA DIVISION
MANAGER
ASSISTANT MANAGER
PUBLIC CONTACTS WITHIN DIVISION
RELATIONS WITH CITIES, DISTRICTS,
COUNTIES & CUSTOMERS
RESERVOIR & WATERSHED SURVEILLANCE & MAINT.
WATER REGULATION
PUMP STATIONS OPERATION & MAINT.
BUILDINGS & STRUCTURE MAINT.
TRANSMISSION CONDUITS OPN. & MAINT.
WELL FIELD & FILTER GALLERIES OPN.
CHLORINE STATIONS & AERATOR OPN.
CHLORINE HAULING FOR DEPT.
METER READING & COLLECTIONS
PURIFICATION DIVISION
MANAGER
RELATIONS WITH GOV. HEALTH AUTHOR.
TREATMENT PLANTS
LABORATORY
WATERSHED SANITATION
SPECIAL INVESTIGATIONS
ALGAE CONTROL
CROSS CONNECTION CONTROL
INSPECTIONS
DEPARTMENTAL CIVIL DEFENSE COORD.
DEPARTMENTAL RADIO SYSTEM COORD.
AGRICULTURAL DIVISION
MANAGER
MANAGEMENT OF
PROPERTY LEASES
WALNUT ORCHARD
REVOCABLE PERMIT CONTACTS

DEC 1962

RETIRED

July 1, 1965 through June 30, 1966

During this fiscal year, the following employees were retired from service and recognition is given to their faithful service in the organization::

Employee	Classification	Years of Service
Barlas, Bernard	Junior Account Clerk	4
Buckholz, Zelma J.	General Clerk-Typist	12
Curtin, Timothy	Laborer	15
Hynes, Charles	Head Clerk	36
Lewis, William	Billing Pre-Auditor	11
McCarthy, Daniel	Soil Testing Aide	8
McGuire, Nellie	Senior Clerk-Stenographer	12
Ostlund, Ejmer	Consumer's Serviceman	32
Peterson, Frank	Consumer Account Assistant Supervisor	25
Rice, Francis	Senior Water Service Clerk	36
Shelley, William	Automotive Serviceman	8

IN MEMORIAM

Bloom, George	June 4, 1966	4
Byrne, Thomas	July 27, 1965	19
Dean, Wade	July 9, 1965	20
Heilbron, Eric	February 14, 1966	3